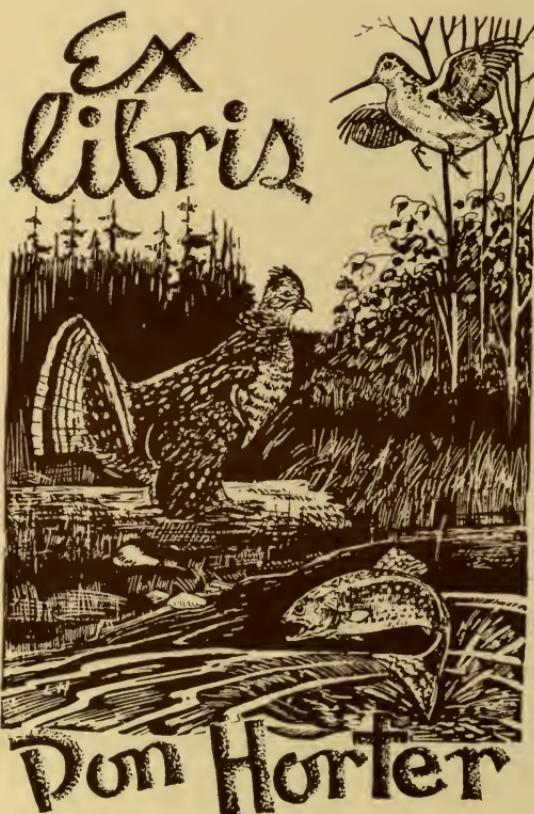




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No. 418

SECRETS OF THE SALMON



THE AUTHOR GAFFING HIS OWN SALMON PLAYED ON A 6-OUNCE ROD

SECRETS OF THE SALMON

BY
EDWARD RINGWOOD HEWITT



WITH ILLUSTRATIONS FROM PHOTOGRAPHS AND
DRAWINGS BY THE AUTHOR

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TO MY FRIEND
AMBROSE MONELL

THE BEST OF FRIENDS, A PRINCE AMONG MEN,
AND THE BEST SALMON FISHERMAN I EVER MET.
THE THOUGHT OF THE HAPPY DAYS WE
HAVE SPENT ALONG THE RIVERS WILL EVER
BE ONE OF MY MOST CHERISHED MEMORIES

PREFACE

OF all kinds of fishing practised in all parts of the world, salmon fishing is still generally regarded as the most interesting. This sport is so ancient that a lore has grown up about it and customs and methods have become so fixed that it seems almost a sacrilege to change them, or to attempt anything in the way of innovation. Being an inventor by inheritance, nature, and profession, I happen to be one of those who have no regard for convention, or what others do, unless it appeals to my sense of what is right and reasonable for the result to be accomplished, and it was in this spirit that I approached salmon fishing. My object was to hook and play the fish on an artificial fly, no matter how it was accomplished and whether I followed the accepted customs or not. In this way I have studied the sport for the last twelve or fifteen years, and have succeeded in devising methods of fishing and tackle which cause salmon to rise in any water and under all conditions, so

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that I can safely say that in any of our Atlantic rivers, where there are salmon and where they can be seen in the pools, I can always raise a number each day and generally secure a good catch if I am skilful enough not to bungle the casts and the hooking of the fish to too great an extent. The methods used are largely of my own devising, as I had never heard of using a dry fly or nymph fly for the salmon before I used them for the purpose myself. My friends Ambrose Monell and George La Branche have worked on this interesting problem with me and have given me the benefit of their knowledge and experience. We have fished a number of seasons together in the Upsalquitch and tried out many experiments.

In order to understand why it is necessary to have other methods than those in use by the regular fishermen we must look to the habits of the salmon when in fresh water. The science of psychology applies to fish as well as to all other members of the animal kingdom. To understand salmon we must study salmon psychology as well as know the salmon's physical habits and life history. Even with this knowledge one discovers that the salmon

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often does most unusual and unaccountable things, some of which will be mentioned in later pages. Perhaps it is because the salmon is away from his natural home in the sea and placed in a confined environment subject to changes from day to day and hour to hour. Perhaps these sometimes get on his nerves. Although I understand him better than most people and am a little like Kipling's captain in "Captains Courageous," who caught more cod than the rest of the fleet because he had a mind like a cod and could think like a cod, I am still far from a complete knowledge of the fish and only write what I have observed and experienced, at the request of my friends, for the benefit of brother salmon fishermen who have had so many blank days in low clear water.

My experiences as related in this volume deal only with salmon of Canadian rivers running toward the Atlantic Ocean, and those of New Foundland. My fishing in Scotland and Wales was limited to one visit, and this was taken before I really knew anything about salmon fishing.

I have endeavored to furnish as much detailed information concerning tackle as possible, as I

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find an almost complete lack of such material in books I have read. The chapter on the appearance of the fly to the fish was written in order to give the facts on which I have based my methods of fishing. In working it out I have obtained much useful information which I hope will be of value in the future.

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CHAPTER I

THE LIFE HISTORY AND HABITS OF THE SALMON

SALMON come into fresh-water rivers only to spawn. When they first arrive from the sea the melt and roe are only partly developed, and it takes from three to six months in our rivers to grow these up to the point where they are ready to function. During this period the fish is believed to eat nothing, and the stomach shrinks in size and loses all digestive power. The salmon draws his energy during this long fast from the fat stored between the flakes of the flesh and just under the skin. He loses weight constantly during the time he is in fresh water. A fish weighing thirty-five pounds in June will not weigh over twenty to twenty-five pounds when he is ready to spawn—perhaps even less.

Spawning takes place in our Eastern fresh-water rivers and streams usually in October and early November. The eggs wash into the crevices between the stones, and are mostly covered up with gravel and small stones by the action of the

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tail of the female. After spawning, most of the spent fish find their way to the sea in a greatly emaciated condition. Some fish remain in the larger pools of some rivers until spring, and are known as kelts, or black salmon; these go to the sea the following May or June.

The eggs hatch in ninety to one hundred and twenty days, and the small parr, or young salmon, lie among the stones with the egg-sack being slowly absorbed into the body for about a month before they begin to feed on insect life. I believe the habits formed by the parr have a profound influence on its behavior on its return to fresh water as an adult fish. Any one watching the little parr, along the shores of the river and in the little back waters and shallow pockets, will be struck with the way they take small insects. This summer I sat on the beach and watched some of them carefully. They were about one and one-quarter to one and one-half inches long, and were in about four inches of water. Most of the time they rested close to the bottom just moving their fins. Every little while they darted out a few inches and seized some small insect in the water which I could not see at all. The rush was swift, just like that of an adult salmon for a fly. They then returned

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to their former position in the current, protected by the backwater of the stones on the bottom. They behave exactly as a large salmon does when it takes a wet fly.

Toward evening parr may be seen taking small flies and other insects from the surface. They come up and make a round ring on the surface just as do the large fish. Sometimes they leap clear of the water. One evening while watching them with my son and daughter, we threw pieces of straw or very small chips of wood on the surface to see what they would do. In many cases they came up close to them and did not take them, just as the salmon often refuses the fly; in other instances they seized the chip and carried it below the surface, sometimes making off a foot or more before ejecting it. This corresponds with the way salmon carry a fly in their mouths for some distance under water. These little parr were getting their education on insects. My guide told me this summer that he had several times found maple seeds with their little wings in the stomach of salmon, and this was the only thing he had ever found there. The larger parr seem to feed, to a great extent, on surface insects and nymphs rising from the bottom on their way to

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hatch at the top. Toward evening the surface of a salmon river is all dappled with the rings and splashes of these parr taking flies. In this way the growing salmon establishes his habits of feeding on insect food over a period of eighteen months or so. Brain-tracks so firmly impressed on a growing organism are not likely to be wholly obliterated by a subsequent change of environment, and it may require only a very small stimulus to bring them to the surface of consciousness. As an illustration of the persistence of habits of long standing, I should like to tell of an experience which is somewhat parallel to the early habits of the salmon recurring in later life. For about twenty years I used a foot-power lathe in my workshop. It was my custom to start this by pulling the belt with my left hand to bring the crank to the upper dead-centre, and then raise my right leg and start the foot pedal. About six years ago I put electricity in my workshop, and placed the switch controlling the power at the right above the lathe. When I came to start the power I invariably raised my right leg as I turned on the switch with my right hand. The motion was involuntary and almost irresistible. This persisted for about three years, and I still do it at

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times. In other words, during long years I had formed a brain-track corresponding to certain physical motions, and this persisted in operating even when it was absolutely useless. It was on reflecting on this matter one day on a salmon river that the similarity of this action, and that of the salmon taking the fly, struck me. The salmon has only two years of habit formation while I have twenty, but on the other hand I had thousands of other impressions to obliterate it where the salmon had only a few. No doubt illustrations in their own experience will occur to every reader of motions formed by habits of long standing which persist after their use has disappeared. Of course the human organism is complex, while the fish is low in the scale, having no thinking or reflective centres in its brain. It is natural that fixed habits should be more persistent in the fish. This is my explanation for the salmon taking the fly when he cannot digest it. When he returns to fresh water from his stay at the sea the stomach immediately begins to shrink and loses the power of digestion entirely. This is to make room for the growing egg or melt-sack in the body cavity. It is always found that salmon ship best if *not* cleaned, whereas other fish keep longer if they are

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cleaned. This is because there is no pepsin secreted in the salmon's stomach in fresh water, and the stomach will not digest itself after death, as is the case with other fish. This is the cause of ordinary fish getting soft rapidly. If the salmon is cleaned, the cutting of the flesh is sure to infect the surfaces with putrefactive bacteria, whereas if left alone it is practically sterile.

In our Eastern rivers parr live until August of the second summer, when they gradually make their way to the sea. In September there are very few left. Just before they go to the sea they change their parr markings for the silvery appearance of the adult salmon, and at the same time the tail becomes more forked. They are then called smolt. I have only seen a few smolt in my own experience, probably because later in the year I have not often been near the sea. This year in July the upper waters of the Restigouche were full of large parr about four to five inches long. When I returned in August the river was almost free of them, and I only saw a few. They were working their way to the sea, and probably took on the smolt stage near tide-water, as there were no smolt in the upper waters. In Scotland parr remain in the rivers over two winters and go out

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the following spring. The difference in habits must be due to selection of those which only stay one winter here, because of the very hard and destructive conditions in our rivers in the winter time. In Scotland there is little ice frozen on the bottom, and the little fish have a better chance.

The growth of the salmon in the ocean is very rapid, and has been subject to many studies in England, where it has been observed by tagging smolt and getting records from the tagged fish when caught. They have been known to return in nine to eleven months, weighing three and one-half pounds as grilse, and in two years as ten to twelve pound salmon, and in three years as twenty to twenty-one pound salmon or even larger. Many forty or fifty pound salmon have been found to be returning to the river for the first time.

It was supposed until recently that salmon always returned to the same river, but the marking of the smolt has disposed of this theory. Salmon tagged in one river have been caught returning in other rivers. One fish marked in Nova Scotia was caught in New Foundland. It is quite likely that the fish which go far away from the mouth of the native river to secure an adequate food supply may return to other rivers, while those which

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feed near their own river while they are in the sea usually return to their native river.

Fortunately the scales of the salmon furnish us with much information about their life history. Scales are composed of layers added on from below. As each layer is a little larger than the previous one it makes a ring on the outer surface. Sixteen such rings are made each year and we can, therefore, tell the age of the fish by counting the rings. When the fish returns to fresh water to spawn, he does not eat, and therefore the process of scale production is arrested and no rings are made while he is in fresh water. The edges of the scale become worn, and a mark is formed around the smooth base of the scale which enables us to identify the spawning periods.

The scales I have selected for illustration from among a large number each show some different phase of life and some peculiarity. I have no doubt a large number of other facts might be brought out by a more detailed study.

Figure 1 is from a twenty-one-pound female Restigouche River fish. The illustration is marked so that the rings can be identified at a glance. The parr rings are closer together than the sea rings, probably because the fresh water does not

88 sea rings equal to
5½ years. Total age
of fish 6 years
9½ months.

21 par rings equal
to 1 year 3½
months.

24 par rings equal to
1½ years.

SALMON SCALES

FIG. 1. 21 POUNDS, RESTIGOUCHE RIVER, NEW BRUNSWICK.
HAS NOT SPAWNED BEFORE

FIG. 2. 21 POUNDS, RESTIGOUCHE RIVER, NEW BRUNSWICK.
HAS NOT SPAWNED BEFORE

77 sea rings equal to 4
years and 10 months.
Total age of fish 6
years 4 months.

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contain as much mineral salts as salt water, and therefore the scale promotion is less. The twenty-one parr rings correspond to one year three and three-quarters months before going to sea. If the parr is hatched in late February or early March it would have gone to sea in June of the following year. This fish was returning to spawn for the first time five and one-half years later, and the total age of the fish was six years nine and three-quarters months. Among the rings formed during the stay in the sea it may be noticed that they are closer together at some points than at others. That is, not so much scale was formed at times. Malloch attributes this to a scarcity of food supply while at sea, probably in winter.

Figure 2, scale from a twenty-one-pound male fish, shows twenty-four parr rings. This fish probably went to sea in August, and returned four years and ten months later. The age of the fish was six years and four months when caught. It had not spawned before, as the base of the scale shows no line.

Figure 3, scale is taken from a twenty-eight-pound Restigouche fish which went to sea at one year and three months, probably early June. It returned and spawned at the age of two years

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and eight months, as shown by the dark line on the base of the scale. The total age of the fish was six years and three months when caught.

Figure 4 scale is taken from an eighteen-pound fish taken on the Terra Nova River in New Found-land. It went to sea in one and one-half years, probably in August, and returned and spawned one year later at the age of two and one-half years. It was five years and seven months old when it was caught.

In most salmon rivers I have fished I have noticed two kinds of salmon: the one round and deep with the head small for the size of the body; the other shaped more like a mackerel, much longer for his depth and a proportionately larger head. The second type salmon is never as large as the other, especially the females; the male fish of this long shape sometimes reach twenty-five pounds, but rarely larger. By observing the scales on both types of fish I have noticed that the mackerel-shaped fish returned to the river early, generally the first or second year, whereas the round-shaped fish stayed in the sea longer and got more complete growth. The months of starvation and hardship no doubt stunt the fish, and leave a permanent physiological effect on

65 sea rings equals 4
years and 1 month.
Total age of fish 5
years 7 months.

80 sea rings equal to 5
years. Total age of
fish 6 years 8 months.

24 par rings
equal to $1\frac{1}{2}$
years.

20 par rings equal
to 1 year and
3 months.

Spawning ring age 2
years and 8 months.

Spawning ring, 16 rings
after par rings equals
1 year.

SALMON SCALES

FIG. 3. 28 POUNDS, RESTIGOUCHE RIVER, NEW BRUNSWICK,
SPAWNED

FIG. 4. 18 POUNDS, TERRA NOVA RIVER, NEW FOUNDLAND,
SPAWNED ONCE

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him. In our rivers grilse are always males, while in Scotland female grilse are common. This accounts for the fact that the female fish average much larger in size here, as they have not been stunted. The formation of the coast and the nature of the sea food have a great effect on the size of the salmon. If when the smolt go to sea they find an abundance of food close to the mouth of the river, in shallow bays and estuaries, they do not wander far out into the ocean or along the coast. In the spring when the great freshets occur in the rivers they sense the fresh water, which is often carried great distances over the top of the heavier salt water by the wind, and their spawning instinct is stimulated and they follow the fresh water and return to the river. I have seen them in Alexander Bay, on the coast of New Foundland, six or eight miles from the mouth of the Terra Nova River, swimming slowly along the surface with their back fins out of water, making for the river. The whole surface of the bay was marked by little waves made by their back fins, all going in one direction. In New Foundland, on the east coast, food is available close to the mouths of the rivers in the shallow bays, and I doubt if the salmon ever leave them. I have no-

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ticed scales in many instances when the fish went to sea in November or December and returned in June, and did the same thing the following year. Naturally these fish are stunted, and such rivers only rarely contain large fish. They usually run from six to ten pounds. On the west coast, however, the bays do not furnish as much food, and more fish leave and cruise in the Gulf of St. Lawrence. These fish stay out longer and are, therefore, larger in general, although it is rare to see many fish of over twenty to twenty-five pounds.

The rivers of New Brunswick emptying into the Bay of Chaleur show types of salmon having different habits when they go to sea. The Cascopedia fish are nearly all large, from twenty to fifty pounds. These fish seem to winter off the south coast of New Foundland in about four hundred feet of water, where they have been caught in considerable numbers with trawl lines. They only return every few years to spawn and are, therefore, all large. In the Restigouche both types of fish are seen, and evidently some of them stay comparatively near the mouth of the river and find their food there, while others stay further away and get a heavier growth. It is rather

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curious to note that the greater number of big fish go up the streams entering the Restigouche from the north: the Matepedia, Patepedia, and the Kedgewick. In the Tay in Scotland, larger fish are taken in the nets on the north bank than on the south bank.

The smaller fish go up the Upsalquitch and the main Restigouche on the south. The stocking done by the hatchery is all done with spawn from the large round fish, and while some of the spawn has been deposited on the Upsalquitch for a number of years, the size of the fish taken in the river has not materially increased. Perhaps some time we may understand more of these matters, but it will only be by careful and observant study. The first salmon come into the river soon after the ice goes out, but not in very large numbers. There is generally a good run in May, and from then on they keep on coming until September. Their habits are quite different when they first come in from those they exhibit later on. They then seem to prefer the very swift water, they are more active, and certainly take a wet fly far better than later on in the season. It was for this early stage of the fishing that the regular salmon-fishing methods and flies were devised, and up to the

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present time no better way has been found to catch fresh run salmon.

When rivers rise due to rains at any time in the season, salmon seem to revert to those habits for a few days and are easily caught on the regular wet-fly tackle. It requires little skill to hook one, as he will hook himself if the fly is only where he can see it. These are the conditions the regular salmon fisherman prays for, not knowing, poor fellow, that he is missing his finest sport in not knowing how to follow the habits of the fish.

As the water drops and becomes warmer the salmon tend more and more to settle in the pools. Some nights they move from pool to pool up the river, or they may even go many miles in a single night. I have seen them travelling in the day-time over the bars, slowly making their way and resting every little while. But generally when the height of the water does not favor their moving on they stay in the pools which suit them. It is often hard to discover why they like one pool and not another. One year one pool will be full of fish all the season and the next, almost empty. Another year the conditions may be reversed. Sometimes this is caused by changes in the bottom due to freshets, or by logs, or by changes of depth,

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but at times I have been unable to see any changes in the pools at all. I believe it is caused by the first run of fish having stopped in the pools due to daylight overtaking them as they were travelling up. After that each day as new fish came up they joined the bunch as the others went on. The first bunch acted as decoys. There is a settled belief among all guides that if a pool is dynamited salmon will not stop there for a year or two again. I know a number of instances of this, but it may not have been entirely due to dynamiting. It seems hard to believe that dynamite would leave any trace after a winter freshet and ice.

If one watches salmon in a pool early in a season he will notice that they are likely to swim around in bunches, up to about ten or eleven o'clock in the morning, and seem restless. These fish are generally getting ready to leave the next night, and you will not find them there the following morning. After eleven they seem to settle down for the day and take up their positions at the tail of the pool or along the ledges. Sometimes when it is hot they seem to sleep and no kind of fly fishing will move them, but generally they can be caught if the fly is presented in the right way. Guides sometimes throw stones into the pools to

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wake them up. Toward evening they again become restless, especially if they are going to travel that night. Sometimes when they are bent on going up the river when night approaches they will not pay any attention to the fly, no matter how it is placed.

As the season advances and the water warms and becomes lower, they seem to adopt particular pools as homes, and I have often noticed the same net-marked fish in the same pool for several weeks at a time. He may never go any farther up for all I know. At this stage of the season the regular salmon fishing with a wet fly ceases, and few fish can be taken except in some very favored spot and at certain times of day or when there is a change of weather.

It was this condition which I fortunately encountered on my first three salmon trips, and which obliged me to find some way to catch salmon when they were hard to take. On the first trip I caught one, on the second trip six, and on the third, several hundred—I should hate to tell how many. Fifty-two was the largest day's catch. The Bay men who had failed to get any fish in their nets, due to freshets, called me "the human net," as I gave them the fish. I was getting more

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than they got in the nets, and they were glad to get them. I mention these facts to arouse interest and study in the most interesting fish we have. In the salmon we have a fish changing his habits from day to day, and even during the same day. He is unstable and never settled. He is a wanderer and has the doubtful habits of this class. If you want to catch him at all times you must learn to know him in all his moods, and know just what to do to meet them. Don't ever feel discouraged; if there are salmon there it is right up to you to know your business and use your brains and skill to make him take a fly, and I can assure you it can be done if you are good enough at it. I don't pretend to be, but I have had so many surprises in getting fish in large numbers when I had almost given up hope, that I am confident that we could always take them if we knew enough and had sufficient skill. It is this which gives salmon fishing a charm all its own. It is a sport with an interest not equalled by any other.

CHAPTER II

TACKLE

THE tackle required for a complete salmon outfit is far more complicated and expensive than that required for any other form of fresh-water fishing. I have found by observing many fishermen that suitable tackle is little understood, and only few anglers have at hand what they must use on the river if they are to be successful in all kinds of water and weather. In fact, I have only met one man in all my travels who had a proper equipment to take advantage of every contingency. It is for this reason that the present chapter describes in detail what I have found useful and necessary to get good sport at all times.

There seems to be a lack of definite knowledge on the part of fishermen as to the power of their rods and the strength of their leaders. In order to clear up this matter, and make my subsequent description of fishing plain, I have taken the various sizes of Leonard rods I have been using and obtained the amount they will pull in various positions when they are strained as much as is safe

TACKLE

without danger of putting a permanent set in the wood. Of course this point is a matter of judgment, but I believe the experiments were fairly consistent with the best fishing practice. The results are presented in a series of diagrams showing the position of the rod and the pull exerted. The amount of the hooking jerk was determined by striking against a light spring-scales with twenty feet of line out, with the rod in the vertical position, and with the butt at an average of forty-five degrees turned toward the water. It is shown in the diagram for each rod. (Diagrams, Figures 5 and 6, table 1.)

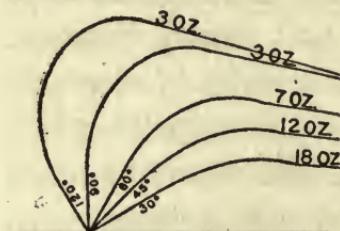
TABLE 1

Rod		PULL IN OUNCES, MAXIMUM						SAFE STRAIN	
		Butt Back 30°	Butt Vertical	Butt Forward 60° to Horizontal	Butt Forward 45° to Horizontal	Butt Forward 30° to Horizontal	Striking Butt Vertical	Striking Butt Forward 45° to Horizontal	
Length	Wt. Oz.								
7 ft.	1 $\frac{1}{2}$	3	3	7	12	18	10	20	
8 ft.	3 $\frac{3}{8}$	8	10	20	36	48	21	40	
10 ft.	6 $\frac{1}{4}$	10	16	24	28	48	24	52	
10' 6"	7	8	14	20	26	48	24	36	
10 ft.	7	12	16	24	48	88	22	48	
11 ft.	11	14	20	35	64	112	30	64	
14 ft.	18	18	28	32	48	80	20	48	
14 ft.	25	22	26	48	64	132	32	80	

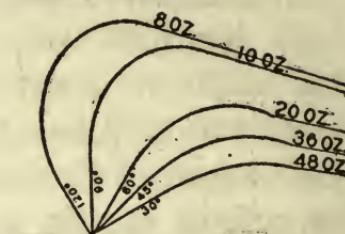
A slight study of the diagram will make it perfectly clear why the tip should be kept up in playing

SECRETS OF THE SALMON

Rod weight, $1\frac{3}{4}$ oz.
Rod length, 7 ft.



Rod weight, $3\frac{1}{2}$ oz.
Rod length, 8 ft.

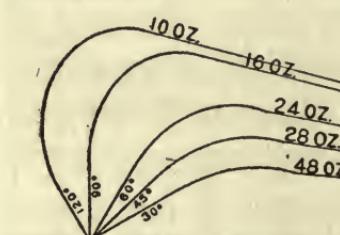


Horizontal.

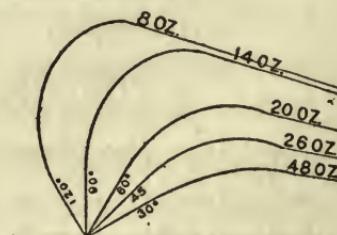
Striking power, vertical position, 10 oz.
Striking power, 45° , 20 oz.

Striking power, vertical position, 21 oz.
Striking power, 45° , 40 oz.
My regular trout dry-fly rod.

Rod weight, $6\frac{1}{4}$ oz.
Rod length, 10 ft.



Rod weight, 7 oz.
Rod length, 10 ft. 6 in.



Horizontal.

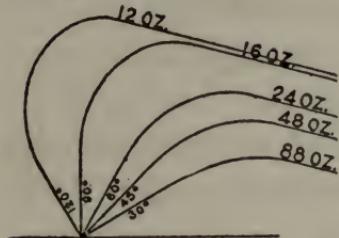
Striking power, vertical position, 24 oz.
Striking power, 45° , 52 oz.
Good for salmon with light tackle.

Striking power, vertical position, 24 oz.
Striking power, 45° , 36 oz.

FIG. 5. SALMON DRY-FLY ROD FOR VERY LIGHT LEADERS, SHOWING ROD HELD IN DIFFERENT POSITIONS WITH MAXIMUM SAFE PULL ON LINE

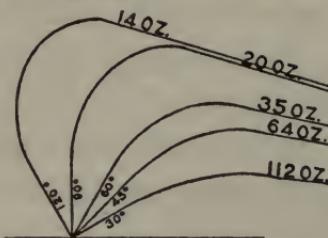
TACKLE

Rod weight, 7 oz.
Rod length, 10 ft.; heavy butt.



Striking power, vertical position, 22 oz.
Striking power, 45°, 48 oz.
Used for salmon wet fly.

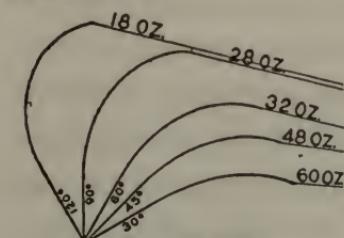
Rod weight, 11 oz.
Rod length, 11 ft.



Horizontal.

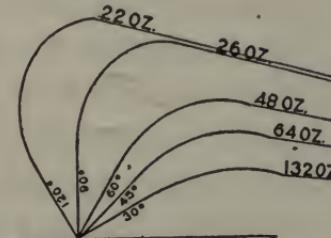
Striking power, vertical position, 30 oz.
Striking power, 45°, 64 oz.
A little too heavy for one hand.

Rod weight, 18 oz.
Rod length, 14 ft.



Striking power, vertical position, 20 oz.
Striking power, 45°, 48 oz.
Special two-handed dry-fly rod.

Rod weight, 25 oz.
Rod length, 14 ft.



Horizontal.

Striking power, vertical position, 32 oz.
Striking power, 45°, 80 oz.
Regular salmon rod, too heavy for light
tackle.

FIG. 6. SHOWING ROD HELD IN DIFFERENT POSITIONS WITH MAXIMUM
SAFE PULL ON LINE

SECRETS OF THE SALMON

the fish on light tackle. The maximum strain in this position is less than half that exerted if the butt were held forward at forty-five degrees. In striking, the pull is about half as much in the vertical position as at forty-five degrees. If the fisherman is to use light leaders he must fish with the butt almost vertical if he is not to break his tackle. That is why it is possible to land the salmon of twenty pounds or more on leaders having a breaking strain of three to three and one-half pounds or forty-eight to fifty-six ounces, a matter which seems puzzling until worked out carefully. You will notice on the diagram that there is ample margin to do this on any of the ten-foot rods if they are not held on an angle below sixty degrees.

I have included on the diagram a series of rods lighter than those I use in salmon fishing, although I have landed a twelve-pound salmon on this same ounce-and-one-half rod. The diagrams show how the length of the rod affects the pull. The shorter the rod the greater the pull. The seven ounce, ten-foot rod was one made especially to cast easily with one hand, and at the same time to give great holding power, if necessary, as the butt is made a little heavier than usual. I use this rod for wet-fly fishing in rough water, where more pull may be

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necessary to turn a fish or keep him away from obstacles. (See chart.)

It is hard to get a fisherman to strike with the rod held vertical, but it can be learned, and as soon as this is done he ceases to break any tackle and lands many more fish.

For wet-fly fishing, the old seventeen-foot salmon rod weighing up to twenty-eight ounces or more is not necessary in our rivers. It is very tiring to use and is really no more effective than a smaller rod. For two-handed wet-fly work, a rod about fourteen feet weighing sixteen or eighteen ounces, is ample for any salmon, and you will have a much better time fishing with the lighter tackle, which will cast far enough for any ordinary fishing.

The casting-line for such a fourteen-foot rod should be of proper weight to make the rod drive well, usually of .045 to .050 diameter. Thirty-five yards is long enough for the casting-line. It should be spliced to at least 150 yards of fine backing. Linen line is often used and is very good, but rots quickly if it remains wet on the reel. A fine oiled-silk line should not rot at all. I have one I have used for ten years, and it is as strong as ever, although I have never dried it. The backing should pull about eight pounds before breaking,

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and should be as thin as possible, so that it will offer small resistance to the current when the fish has taken out a long line. Sometimes the mere friction of the line in the water is enough to pull the hook out of the salmon or to break a leader. Most salmon fishermen use a single-action reel of large diameter and prefer it. I myself much prefer a multiplying reel of smaller diameter; this is a matter of taste. The important thing is to have a light drag or click and a light barrel so that the reel will have a slight inertia in starting when the fish makes a sudden rush. A leader is easily broken by the slightest increase in friction on the reel. I always go over all my reels and see that they are in really good condition before I use them.

It is very difficult to use a light leader on a fourteen-foot regular salmon rod, as this rod is too powerful and will break the leader often, no matter how careful you are. A leader breaking at five pounds with the small end about .014 diameter is about as fine as you can safely use. As you will see later, such a leader is too coarse to take many fish in low water, and for this reason such a rod will not enable you to be successful under these conditions. The line necessary to

TACKLE

make such a rod act properly is far too heavy, and will scare the fish in low water.

In order to have the advantage of the fourteen-foot rod together with the lowered strain on the leader and the use of a smaller line, Mr. Monell, Mr. La Branche, and I have had a special rod made weighing eighteen ounces, but built lighter toward the tip. This rod will cast an E line .035 diameter perfectly, with fourteen feet of leader, and you will see by the diagram that its holding and hooking power are well within the three and one-half pounds breaking strain of a leader .010 at the small end. With this tackle you can use these small leaders successfully on large fish and rarely meet with breakages. There are many conditions on the river where a fourteen-foot rod has great advantages over a ten-foot rod, and I always carry one of these rods, and have about abandoned the heavier type, which I use only for very high water and large fish.

For clear-water fishing the most satisfactory all-around rod for the man who casts well is the five-and-three-quarter-ounce, ten-foot tournament model, single-handed rod, which weighs with reel-plate six and one-quarter ounces. I have them made with an extra handle, which I put on below the

SECRETS OF THE SALMON

reel; this should be six inches long with round rubber end-piece to rest against the body when playing the fish, as the left wrist will get too tired during the long fight. I often carry the extra handle in my pocket until a fish is hooked. Such a rod should use a line .040 to .045 diameter at the heaviest part. This will cast ninety feet with ease in the hands of an expert, and seventy feet for fishermen at all skilful. Ladies easily cast this distance. For fishing all day this rod is about as heavy as most people can stand without undue fatigue. Note the holding power and light striking power in the vertical position in the diagram. For dry-fly work in very clear low water I have had made a special ten-foot, six-inch rod, seven ounces in weight. You will notice that this rod exerts less strain in the vertical position, than the five-and-three-quarter-ounce tournament, and also when the butt is back. At the same time it has only a little less holding power when the butt is forward, and kills fish rapidly. I can use an E line, .035 diameter, on it and lighter leader without breaking them than any rod I have seen. This is the best tackle for low, still, clear water. It will cast about ninety feet easily, but will not drive into the wind like the tournament rod.

TACKLE

For the best equipment for all kinds of water, the angler should have all these rods, and the heavier salmon rod if he is likely to encounter heavy water and large fish. This makes a total equipment of four rods.

A good reel is also essential, and any reel will not do. The resistance to the pull of the line when the barrel is full should be two ounces, less than this will be likely to allow over-runs when you strip out the line. More drag will cause too much strain on a fine leader, when a fish makes a sudden rush and you cannot give with the tip sufficiently. I much prefer the small-diameter barrel multiplying-reel, and use reels having a diameter of spool when full of line, of two and one-quarter inches, and about one and a quarter inches to one and one-half inches in length. If thirty yards of line .040 in diameter are used and 200 yards of very fine oiled-silk backing, this will just fill these reels nicely. The weight of my best reel equipped in this way with line and all on, is six ounces. I had to make this reel myself to get the light weight. The others run from eight to twelve ounces filled with line. I believe I can make a reel and line with a total weight of five ounces, to do the work, but this would be the

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limit of lightness. You notice a great difference in fatigue, at the end of a long day, whether the reel weighs six or twelve ounces. All my friends who have handled my rod, with the light reel, prefer it. The small barrel of the multiplying reel is a great advantage, because the pull of the drag increases as the line is taken out by the fish, and the two-ounce drag it starts with becomes four ounces if it is reduced to one-half the diameter. Very narrow, large-diameter reels increase the pull too rapidly for fine tackle.

Good lines are hard to get and I have made my own for some years. Very often the dressing gets sticky and this renders the line useless. If the dressing is too soft and pliable, it will not stand the wear of passing through the guides fast, as in heavy salmon fishing. I have several times worn out a line in a few days so that it would not cast well. In fact there were spots where the silk was cutting. A line with a hard finish is best, a finish containing varnish. A plain oil-dressing will not stand this work. The line must be of suitable size and weight for each rod to make it cast properly. A line which is right for one rod is often wrong for another. Take the line which casts best at about sixty feet, without overloading the rod.

TACKLE

This will drive into the wind well. Tie a small knot in the end of the line and attach the leader as shown in the picture. This is the smallest knot

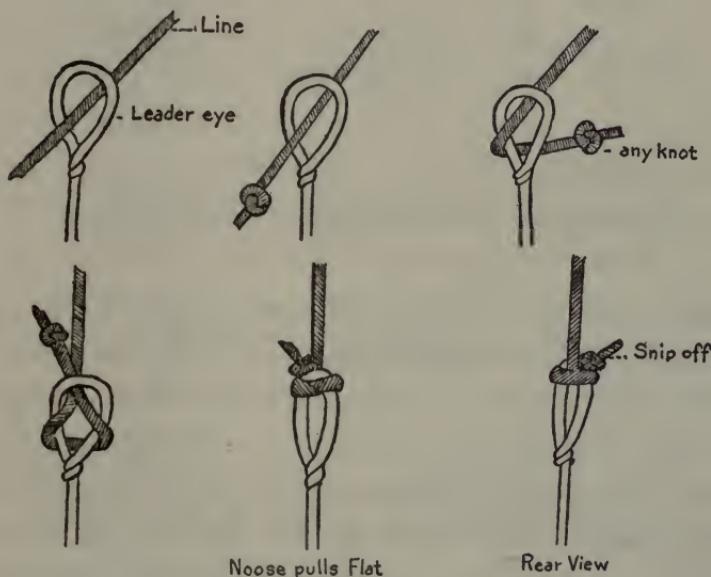


FIG. 7. LEADER-LINE KNOT

you can make and it will not come undone. You can easily loosen it by pulling the knot in the end of the line with your nail. (Figure 7.)

The leader is the most essential part of the salmon fisherman's outfit and the part hardest to get. No matter what you may pay for leaders there is no assurance that they are good and will stand hard work. In order to show what the

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best grade of gut I have had will stand, I give the following tests which I have gotten on various lots:

Diameter of gut	Breaking strain in pounds, wet
.006.....	2-2 $\frac{1}{4}$
.008.....	2 $\frac{1}{2}$ -3
.010.....	3-3 $\frac{1}{2}$
.012.....	4-4 $\frac{1}{2}$
.014.....	4 $\frac{1}{2}$ -5
.016.....	6-6 $\frac{1}{2}$
.018.....	7-7 $\frac{1}{2}$
.020.....	8-8 $\frac{1}{2}$

This, of course, is a general average of very good gut. They are not the best pieces I have ever had. Gut like this can be obtained if you take enough trouble and test it yourself. It will hold salmon well. The ordinary gut sold is about forty per cent weaker than these figures, and it is hard to get gut of .012 to go over three and one-half pounds.

For nearly all my fishing I use a fourteen-foot leader made .020 at the large end and .010 to .012 at the smaller end. If I need smaller, finer ends than this, I use three to six feet of finer gut tied to this, because when you want a fine leader you always need a long one in salmon fishing. In wet-fly fishing I sometimes take off four and five feet, and add some heavier gut to say .014 in place

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of the finer end. The gage shown in the illustration (Figure 10) is always carried in the fly book to measure gut sizes. It is of magnesium alumi-

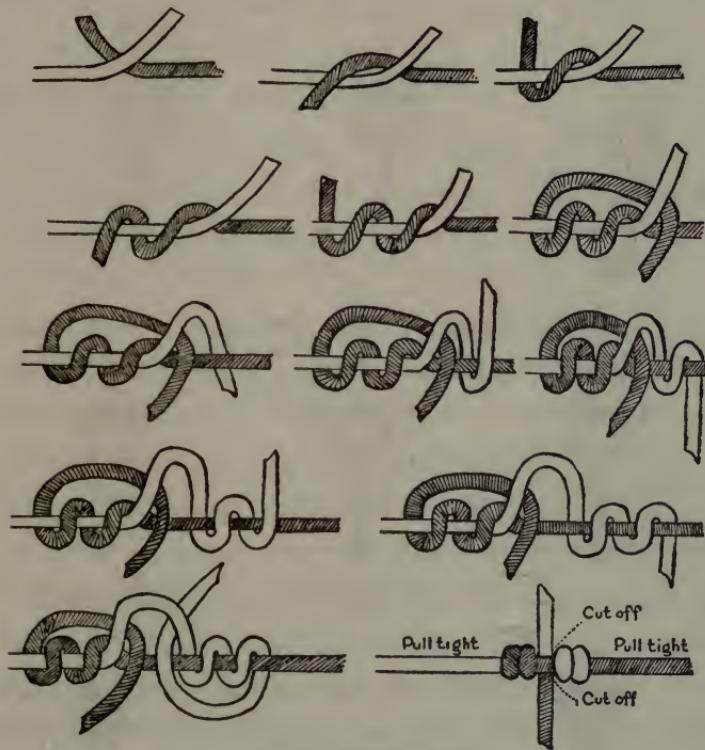


FIG. 8. LEADER KNOT

num alloy, and weighs almost nothing. Figure 8 shows the easiest and best leader knot.

In the latter pages the necessity of the fine sizes of the leaders will be shown. I consider the leader the most important element in salmon fishing.

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Only a few of the fourteen-foot leaders need be carried, say twelve or fifteen. This season my son used one leader for two weeks. I used one

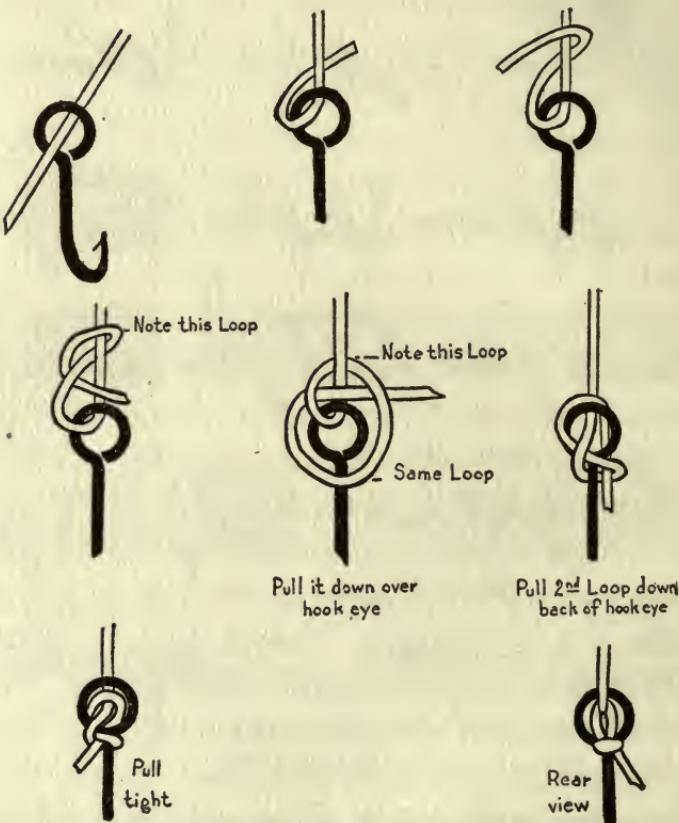


FIG. 9. KNOT FOR ATTACHING DRY FLY TO LEADER

for four weeks and only renewed the fine ends. I carry a considerable number of fine ends, of two to six feet, which can be tied on as required. These

TACKLE

run from .006-inch to .12-inch diameter. Two or three heavier leaders should also be taken along for very heavy high-water and large flies; fine leaders will not cast large flies properly. This is all that is required in the way of leaders.

The question of flies is one that has been fought over for generations, and the war is not over yet. However, I think I can clear up some of the mystery and perhaps reduce the number of patterns the fisherman thinks he must carry. I have found in wet-fly fishing three things which seem to affect the attractiveness of the fly: the size, the weight, and the brilliancy in the water. Usually, when a change of pattern causes the fish to take the successful fly, it is either because it is different in size, runs deeper in the water, or has more or fewer feathers on it. I have rarely found that the pattern itself is of any importance. As a general thing the bright fly takes more fish. To this class belong the Silver Doctor, Silver Grey,

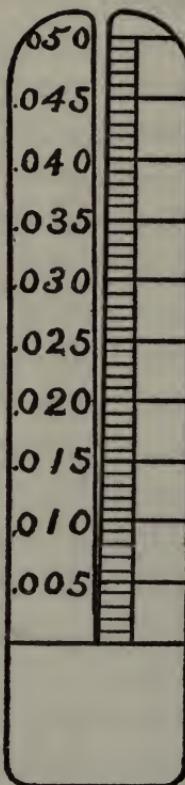


FIG. 10. LINE AND LEADER GAUGE GRADUATED IN .001 INCHES

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Dusty Miller, and Wilkinson. J. J. Hill used to say he did not care what flies he had as long as he had plenty of Silver Greys. The Jock Scott and Black Dose are fairly brilliant in the water, while the fairies are dark. It makes almost no difference which of the flies of the dark or light pattern you use, the size is all important. You should carry flies from No. 12 to No. 00. I carry Nos. 12, 10, 8, 6, 4, 2, 0, 00. I have few of the larger flies, and a good many of Nos. 6 to 10. I use mostly Nos. 8 and 6 when wet-fly fishing is good. In the high water the large flies are necessary or the fish won't see them. Under these conditions you cannot do well with small flies. For those who do not know the hook sizes by numbers, Figure 11 gives the actual sizes.

I am often asked by both trout and salmon fishermen my opinion on the theory of exact imitation of insects in flies and whether color is of great importance. In order to make my view clear of the various factors entering into the attractiveness of the fly to a fish, I shall arrange them in what I consider the order of their relative importance. I began on the theory of exact imitation and followed it for years; first in the imitation of the fly, and next in the imitation of the action of

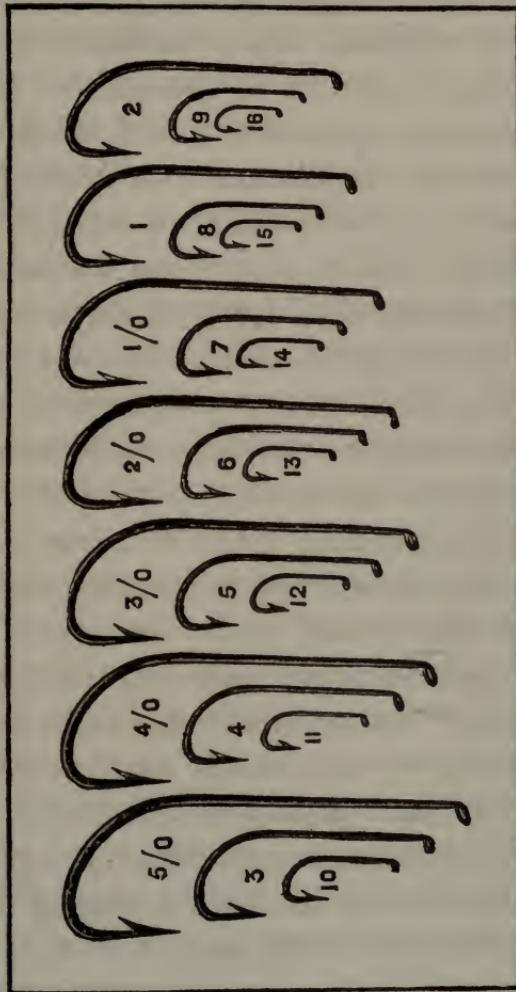


FIG. 11. LIMERICK HOOKS, ACTUAL SIZE

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insects, with the manipulation of the fly which I still regard as very important. As my fishing experiences multiplied and the years rolled on, I came more and more to see that neither of these ideas proved a complete explanation of the action of the fish toward the fly, and I was slowly brought to the point of view that the brain impression formed on the fish by the fly was the important thing. This impression may be made by the light effects of the fly in the water, or by the vision of the fly itself, or its motions. It may be caused by a fly which is an exact imitation of some insect, or it may be caused by something which has no resemblance to anything living so far as I know, yet such flies not only catch fish, but often take more than flies looking more like nature. It is evidently because these queer flies either correspond in their visual action in the water to some natural food, or they awake some instinct for food by the brain impression they form. I am satisfied by my experience to date that we are no more likely to take either trout or salmon with an exact imitation than with some other kind of fly, if it is manipulated to give the right effects on the water and is of the proper size. The regular salmon flies in use certainly do not look like any-

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thing I ever saw in nature. I would like to see a Jock Scott or Silver Grey bug. We don't have them in American rivers, yet these flies are excellent here. I do not claim that we know all about the subject—we are evidently very ignorant on its real scientific side—but I hope the facts given in this book will promote a more intelligent and rational study of the subject. I do not believe it is a very difficult one to completely understand if we apply some real scientific work to it, and so far from reducing the interest in the sport it will vastly increase it for any intelligent angler. Personally I shall not be satisfied to fish and not know the laws which govern the subject. I want to know, and I want the fish this knowledge enables me to catch. I would arrange the factors governing the attractiveness of a fly in the following order of relative importance:

- (1) The light-effects of the fly, above and below the surface.
- (2) The way the fly is cast and manipulated, including where the fly is placed relative to the fish.
- (3) Visibility of the leader to the fish.
- (4) The size of the fly.

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- (5) Design of the fly.
- (6) Color of the fly.
- (7) Accuracy of imitation of natural insects.

It was not until I began to realize the relative importance of these factors that I became a real fisherman. By that I mean one who takes fish on a fly when others fail.

For dry flies I prefer the hackles tied Palmer—that is, tied all the way down the shank to the bend of the hook. The gray and brown are all that are necessary. They require no special body. They should be in a size from one-half-inch diameter to one-and-one-half-inch diameter, and the hooks should be from No. 10 to 6 Penell Limerick style. The winged flies which I have found good are the Cahill, Rube Wood, Whirling Dunn, Pink Lady, and Greenwell's Glory. They all raise fish well if properly handled, but they do not seem as good as the hackles and are more difficult to keep in perfect condition on the water. It is very important to have all sizes of dry flies, as will be shown later. Erect-winged nymph-flies are very taking at the right time, and are often the only way to get the fish when they are rolling. This style of fly is not usually on sale at the tackle-stores at

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present, but ought to be soon. I have them made in various sizes and with bodies of different weight so they will run at different depths. The size is from No. 12 to 8 Penell Limerick hooks. Very small wet flies can be made to take their place fairly well, although they are not nearly as good. Wingless nymph-flies may also be used and are excellent. Figure 9 shows the best knot for tying a dry fly and leader together, especially small flies.

This seems to cover all the tackle required, but there are two very necessary adjuncts to its use. A mixture of albolene and kerosene, half and half, for dry-fly dressing will make them float properly. The fly should be dipped in this and then shaken, in order to drive off the excess, then cast a few times in the air; it is then ready and will float for some time if not allowed to go below the surface. If the fly fails to float properly, rub it with your handkerchief to dry it off, and again apply the oil mixture. This will generally keep flies working well, particularly hackles. Every one finds difficulty in making dry flies float well, high up on the water—particularly large salmon dry flies. It is only with great skill and much practice that this can be accomplished all the time.

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A second necessity is a small box of deer's fat for greasing the line. This should be done every morning before beginning to fish, while the line is still dry. If the line fails to float properly at any time of the day it should again be greased. It is very hard to pick up a line properly off the water if it sinks and the sunken line always disturbs the fish if it comes near them. This is the main reason why wet-fly fishing stirs up a pool and prevents the taking of more fish. A line floating on the surface when not directly over the fish will not scare them.

If you cannot have a more expensive outfit you should at least have a six-and-one-quarter-ounce rod made as described with reel and line to suit, and a fourteen-foot, eighteen-ounce rod built light at the tip. If you can do so, add to this a light regular fourteen-foot salmon rod, with its suitable reel and line. If I had to go salmon fishing with only one kind of rod, I should certainly take the six-and-a-quarter-ounce tournament rod. I am certain that during the whole season I should hook and land more fish, and have a far better time, than I possibly could have with any other one salmon tackle, but its use on large fish requires much skill and practice. I gave one of

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these rods to Mr. Carnegie some years ago, and after once trying it he never used anything else for his salmon fishing in Scotland.

CHAPTER III

WHAT THE FISH SEES

IN recent years many descriptions have been published of the appearance of flies looked at from under the water. I do not, therefore, claim any particular novelty in the descriptions which follow. The accounts which I have seen, however, are all in English publications, and are not widely known among American anglers, and the illustrations are confined to a few photographs. I wanted to see for myself how flies really looked to the fish, as I never like to accept any scientific fact as really so if I can possibly repeat the experiment for myself. In scientific work I have often been misled by statements in books which were made with great assurance and which on investigation often proved not to be correct. The observer had either been misled by his experiments or had written down more than he had seen or had drawn faulty conclusions. In this case it was so very easy to get at the real facts that I decided to make all the necessary observations personally.

Experimenting with a photographic lens under the water, with the water in contact with the lens

WHAT THE FISH SEES

surface, showed the image on the ground glass was always blurred, because the lens was made for the refraction between glass and air and not for that between glass and water, which differs by about one-third. A lens could be made for this purpose, but it would take much time and expense, so the usual method of looking through a glass plate into the water was adopted. The plate was set in the end of the tank holding the water, at an angle of forty-eight and one-half degrees, and the camera placed at right angles to the surface of the plate. In this way the light from the water to the camera passes through the glass exactly at right angles and will not be bent or distorted, and a true image of what the fish sees in the water or on the surface is obtained. As the effects of light, due to the motion of the fly, were of most interest, I soon saw that the ordinary camera would not succeed in catching just the things I wished to show, so I decided to use a moving-picture camera and make "cut-outs" from the film, which would give more convincing illustrations of what was seen. Mr. James L. Clark, who makes the wonderful Akeley Camera, kindly volunteered to take this difficult subject. It was very hard to do because of the small size of the flies and the reduction of the light

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passing through the water and the plate glass. The distance from the camera to the fly was short, giving only a very small depth of focus, so that the pictures were easily blurred. We found that the light entering the surface of the water, when the fly was above the surface, seemed always to give a somewhat blurred image of a floating fly, and I do not believe that we can get any clearer photographs than are shown. It is quite likely that the vision of the floating fly is equally blurred to the fish. When I looked with my eyes through the plate, the image of the floating fly was never perfectly sharp. I want to thank Mr. Clark for his able and generous assistance. The photograph (Figure 12) shows the camera and tank in position.

In order to understand what was seen it will be necessary to enter a little into the phenomena of light and its behavior in its passage from air to water. The diagrams will make the matter simple and explain the subsequent illustrations. When a ray of light enters the surface of still water from above, from any angle except directly vertical, it is bent or deflected. This deflection is found to take place according to a well known law. The diagram (Figure 13) shows an easy way of expressing it. Describe a circle with its centre



Fig. 12. TAKING MOVING PICTURES OF FLIES IN THE TANK

* Arrow points to glass plate showing the angle through which the photographs are made

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at the surface of the water and let a ray of light, $A-B$, reach the surface at B . Draw a line parallel to the surface of the water from A to the line $H-B$, which is perpendicular to the surface of the water. Divide this line into three equal parts.

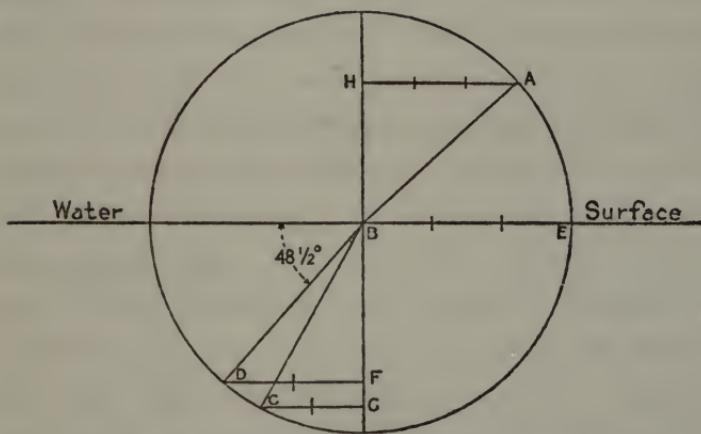


FIG. 13. REFRACTION OF LIGHT ENTERING WATER

Extend the line $H-B$ to intersect the circle below the surface of the water. Take a length equal to two of the parts into which $A-H$ was divided and draw a line parallel to the surface of the water from the circle to the extended line $H-B$, equal in length to two of these parts. This is the line $C-G$. Join C and B . This will give the direction of the beam of light after it has entered the water. The relation of the length of the line $A-H$ and $C-G$ to each other

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is as three to two and is called the index of refraction; it is 1.5 to 1. in the case of water. It will be found, if we lay off the line *BE* on the surface of the water and the line *DF* below the water in the same way, that the angle between *DB* and the surface becomes forty-eight and one-half degrees and the angle *DBF*, forty-one and one-half degrees. As light coming from the water into the air follows the same path as that from air into water, it is evident that light from below striking the surface at an angle of forty-eight and one-half degrees or more, being bent at that angle, cannot get out to the air as it is parallel to the surface of the water and must, therefore, be totally reflected. This means that the fish can only see out of the water at an angle of forty-eight and one-half degrees or more to the surface, and beyond that angle he sees only the reflection of objects below the surface, reflected back from the surface as from mirrors. If the water is not too deep he will see the bottom reflected against the surface, beyond the angle of forty-eight and one-half degrees. From forty-eight and one-half degrees to vertical he can see out. He therefore sees out through a circular window; the angle from his eye is twice forty-one and one-half, or

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eighty-three degrees. It is as if he saw out through a port-hole surrounded by a mirror.

The diagram (Figure 14) shows this clearly. F represents a fish near the bottom. He can see out till he reaches the line AF or $A'F$. Beyond

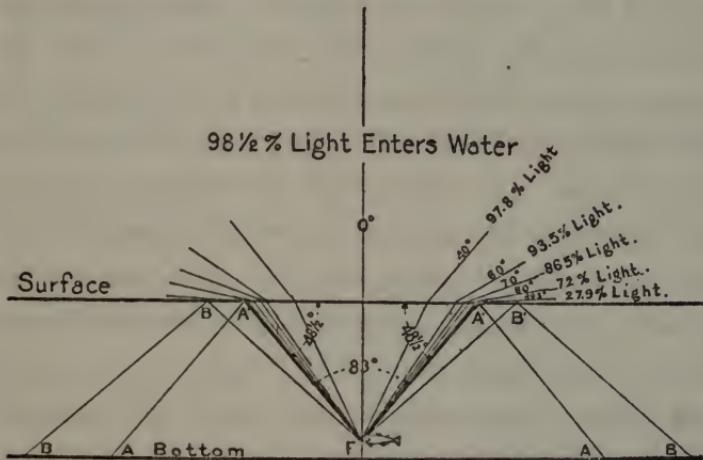


FIG. 14. DIAGRAM OF FISH'S WINDOW

these lines he sees the reflected bottom. Suppose there is an object at B . The fish can see this directly through the water in a straight line, but he will also see this at B' reflected against the under side of the surface. The same is true of an object at A . A fly below the surface beyond A or A' is seen directly and also its reflection against the surface.

Light entering the water at different angles does

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not all have equal intensity; when the beam reaches the surface of the water it is more and more reflected as the beam becomes more nearly parallel to the surface of the water. I have indicated some of the percentages of light which enter the surface at a number of angles. These figures are taken from one of Tyndall's lectures. They are interesting to anglers as showing that objects near the water are not as well illuminated to the fish as those higher up. The small boy learns this early and crawls to the edge of the trout-stream. You will see from the diagram that light from above on an arc of ninety degrees reaches the fish from an arc of forty-one and one-half degrees; this means that objects seen outside the water are flattened in the fish's view. They are, of course, more flattened the closer they are to the water. The portraits of the author at the end of the tank, taken from below, compared with some of the other pictures of the same subject in the book, show the flattening effect.

This phenomenon of the window from which the fish can see out is a very important one to the fly fisherman, because the window is not always the same size, but increases with the depth of the water above the fish. In very shallow water he

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has a small window, and in deep water much larger. Diagram (Figure 15) shows the distance

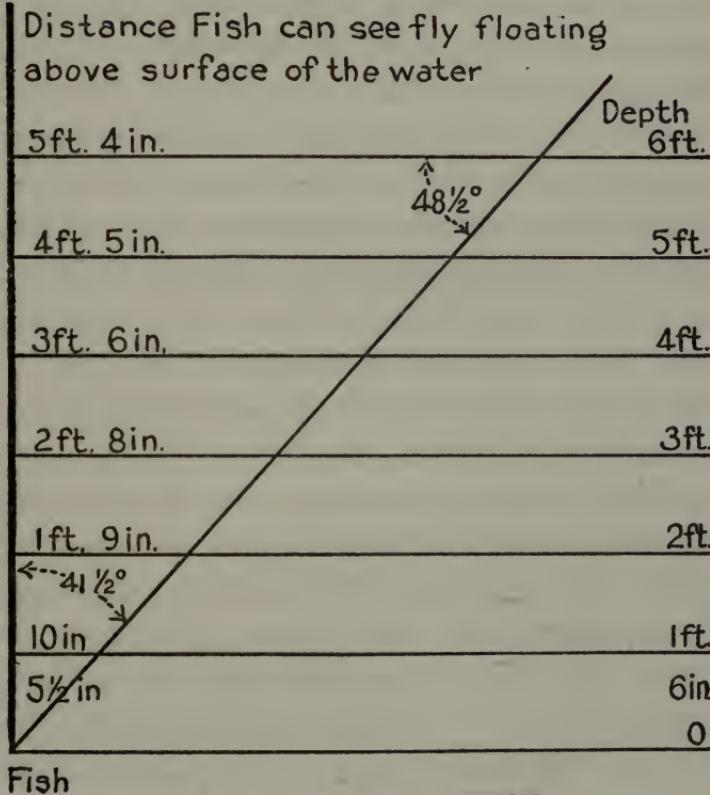


FIG. 15. SIZE OF FISH'S WINDOW

from the eye of the fish to the edge of his window at different depths.

I have often noticed how close a dry fly must come to a trout in shallow water to have him take it, and in fact I have a moving picture of a rising

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trout in shallow water taking natural flies on the surface, and a dry fly passing by him several times without his noticing it, because it was purposely cast too far away and outside his window. It was then made to float close to him, and he took it at once, because it passed within his range of vision; in other words, within his window. With this explanation we can now understand what was seen and photographed in the tank. I am not going into the debated question of the eye of the fish. It seems to me it is fair to assume that he sees the visual image which is really there and that he sees the same thing we do, with this difference: our eyes combine to make one image and give a stereoscopic effect, while the eyes of the fish are independent of each other. He probably does not get any stereoscopic effect to help him judge distance. This may account for some of the times he misses the fly. He sees a separate image with each eye. Perhaps the reason we find salmon taking a dry fly more often when it is directly over them is that then they have two images of the fly and twice the brain stimulus. A fish's eye seems to have a very large pupil, and therefore has great light-gathering power, which enables him to see in the dark, or rather when there is a very

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small amount of light. Under natural conditions it is never absolutely dark in the open. It would be interesting to have fish in absolute darkness and see if they could detect a fly; with bait they might be attracted by the odor. It is known that owls and cats and other nocturnal animals see at night. This is simply a question of a large enough light-gathering surface and sufficiently sensitive retina. It is like the night binoculars used by seamen which gather a large area of the light, thus assisting them to see on dark nights. Beyond dispute, fish have acute vision—often far too keen for us poor anglers. I have often seen them frightened by a leader .004-inch diameter at several feet distance. They see the smallest gnats or midges. I have seen trout rising for flies invisible to me, except in certain lights, when they looked almost like floating dust. Our Maine Indians call these minute midges "No-see-Ums."

Looking up into the tank through the plate glass you see a segment of a circle within which you can see out to the sky and outer world, and surrounding objects, as explained before, are much flattened when they are near the surface. Beyond this circle you see the reflection of the bottom and objects resting on it. In some of our photographs

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we had part of the bottom white and part black, in order to see the difference in appearance of wet flies against the different shades. Stones and tea-cups were also placed on it and show in the pictures. In the animal kingdom the law of color protection, which extends to both land and water species, is that the upper part of animals where the light falls most is dark, and the lower part light, where they are in shadow. By this means the effect of light is somewhat equalized and the animal made less visible. It would seem then, that to make flies visible our wet flies should have the opposite shades, that is, light on top and dark below; this is done in the Black Dose and Jock Scott. The fly when close to the surface being reflected perfectly, the light upper part will show up from below much more visibly in the reflection than on the real fly which is in shadow when seen from below. I have no doubt that salmon which "come short" so often are frequently pursuing the reflection and not the real fly. They are more or less out of practice because they live in deeper water in the ocean where the reflection is not seen. Trout live always in the same kind of environment and become very skilful, but even trout make many mistakes. As a wet fly ap-

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proaches the surface the real fly and the reflection come together, and at one time the fly appears just double size. Perhaps this is the point at which the fly is most often taken. When the fly breaks the surface the little waves form light condensers and a brilliant flash or series of flashes results. This must be a great stimulus to the fish and he can no doubt see it a long distance off. It seems to me that the light effects of flies both at the surface and below are much more important in fishing than the design or color of the fly. I have certainly found this to be the case with salmon and have made it a practice to observe the direction and intensity of the light while fishing. I know of one pool on the Upsalquitch where I can always get a rise at 3.20 P. M. in early August because at this time the shadow of the mountain passes, and the light is such that the fly suddenly becomes brilliantly visible to the fish located in rather deep water. We have all seen pools which yield fish if the cast is made from one side and never if it is made from the other, except at certain times of the day. This is, no doubt, due to the lighting of the fly more than to its direction of motion past the fish.

This summer one of my friends was fishing a

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pool where the current strikes a ledge at about forty-five degrees angle. The salmon were lying along the ledge close to shore and his boat was anchored about sixty feet out in the pool. The fly was cast toward the shore and swung outward. A salmon came short for the fly six or eight times. I happened to be watching from the bank and noticed the light and thought that at the point where the salmon reached the fly it must be in shadow. My friend was about to give it up when I called to him to move the boat inshore and cast close to the ledge and pull directly up-stream. In this way the fly would be well lit. He did so and hooked the salmon on the second cast. This seemed a plain case of fly illumination.

When the dry fly is floating high on the surface the fish can see only that part of the fly which punctures the surface if the fly is outside his window. This generally means the hook or the points of the hackles. Each one of these breaks the surface and makes a miniature lens which catches the light. The fish sees these light spots a long way off. As the fly passes into the window it becomes visible above the surface and, as it is flattened in appearance, the higher it sets up the larger it appears. If the dry fly is moved or strikes the water

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outside the window it causes miniature light explosions which are very visible at long distances. It is these which warn the fish of the approach of insect food and can scarcely fail to attract his attention.

With dry flies the light effects are even more marked than with wet flies, because they rest on the surface, and have every opportunity of making the meniscus rise about the hackle or feathers due to the surface tension, and cause it to act as a light condenser which will make brilliant spots of light when seen from below. If the fly is moved on the surface beyond the window it makes brilliant light flashes almost like explosions from the point of view of the fish. This explains the great effectiveness of Mr. La Branche's "bump cast" where he makes the fly strike the water and make several little jumps before it comes to rest, and floats into the fish's window. I have often watched him take many more trout than other anglers largely because of his ability to make this type of cast. In riffley water it is, of course, very taking, because it attracts attention amid all the disturbance when the fly might otherwise pass unseen. I have used this on salmon also with great effect, and the method mentioned under the head

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of drag or dropper fishing is based on this although I did not know it at the time.

The dry-fly illustration (Figure 16) shows a dry fly at a distance showing only a light spot. As it comes nearer the light spots about the hackles are better seen, and as it comes into the window the fly can be seen against the sky. Note the light effects as the fly is moved. These show very vividly in the moving picture and are sharp flashes. Figures 17, 18, 19 show stiff Palmer-tied hackles on the surface both in and out of window, still and in motion.

A winged dry fly of the Miller type is shown in the figure beyond the window, and coming into the window. (Figure 20.) The wings do not show well as they are light gray in color and do not stop the light sufficiently. The next illustration is a Whirling Dunn and with starling wing it shows up better than the Miller. (Figure 21.)

A live grasshopper was placed on the water surface, and you can note the light effects he produces as he kicks; no wonder he does not get very far when there are any fish. (Figure 22.) This shows why flies take fish. They give light effects similar to real insects.

Our modern bass plugs with their screw pro-

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ppers and all other means of breaking the surface of the water are based on this principle. Salmon will also take them. My son raised a number of salmon on a bucktailed mouse this summer on the Restigouche, and in fact had several rises on one cast, but he was laughing so at the antics of the fish he could not hook them. He finally, however, landed two, just to show it could be done. It is well known that salmon readily take a spinner or spoon, sometimes even better than a fly.

I have made some very interesting experiments with wet flies, covering the feathers with the aluminum foil. The reflection was better than with any other substance I have yet found. The flashes were vivid and the reflected image on the lower side of the surface of the water extremely bright. (Figure 23.) I have no doubt that flies of this type will be superior to anything else under certain water conditions, and I am most anxious to try them out again next summer. In high rough water such flies ought to be more visible and therefore take more fish. I have patents applied for on this type of fly.

Leaders act as light condensers due to their semi-transparency and make both small flashes of light as well as long lines of light and dark lines in

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the water. These effects are not similar to any natural phenomena along the river, as there are no insects or plants which make light effects of this form. It is probably for this reason that leaders frighten salmon so easily. Why the difference of a few thousandths of an inch in diameter of a leader should make so much difference it is hard to comprehend, but watching the leaders in the tank showed that leaders smaller than .012-inch diameter were much less visible. It must be only a matter of degree, and experience has taught me that I can raise salmon on the fine leaders when it is impossible to do so with leaders of even .12-inch diameter. Let any one who questions this experience try it out on the salmon river with leaders carefully gauged and he will soon convince himself. White gut acted as a better light condenser than the stained gut and made bright flashes on the water. The dark mist-stained gut proved the least visible of any I had been using, but even this seemed to act somewhat as a lens and to make some light flashes. It then occurred to me to try to make the gut opaque and less shiny. To do this I soaked white gut in a solution of silver nitrate and then exposed it to light to turn the silver into minute grains of black metallic silver. This



Far outside window.



Closer to window.



At edge of window.



Moving at edge of window. Note light effects.



In window.



Moving at edge of window.

FIG. 16. GREY HACKLE DRY FLY



Outside window.



Moving outside window.



Approaching window.



Approaching window.



Near edge of window.



At edge of window.

FIG. 17. BROWN HACKLE DRY FLY



Fly pulled from surface.



Fly leaving surface.



At edge of window.



Fly alighting on surface.



In window.



In window.

FIG. 18. BROWN HACKLE DRY FLY IN MOTION AT SURFACE



FIG. 19. BROWN HACKLE DRY FLY ENTERING WINDOW. NOTE LIGHT SPOTS CAUSED BY HACKLES BREAKING SURFACE FILM



Hackles at edge, wings in window.



Hackles at edge, wings in window.



At edge of window.



At edge of window.



Outside window.



Closer to window.

FIG. 20. GREY-WINGED MILLER DRY FLY



In window.



Hackles outside window.



Approaching window.



At edge of window.



Hackles making light spots outside of window.



Tip of wings just showing in window.

FIG. 21. WHIRLING DUN DRY FLY



Still.



Moving a little.



After a kick.



After a kick.



Kicking.



Kicking.

FIG. 22. LIVE GRASSHOPPER



Foil on both sides of wings.



Foil on both sides of wings.



Foil on one side of wing.



Foil on one side of wing.



Foil on one side only.



Foil on one side only.

FIG. 23. WET FLIES WITH ALUMINUM FOIL WINGS



Leader .006 in. at surface and below.



Leader .006 in. at surface and below.



Whiteleader flashing.



White leader and same stained with silver nitrate.



Mist stained heavy leader.



Leader .020 in. mist stained.

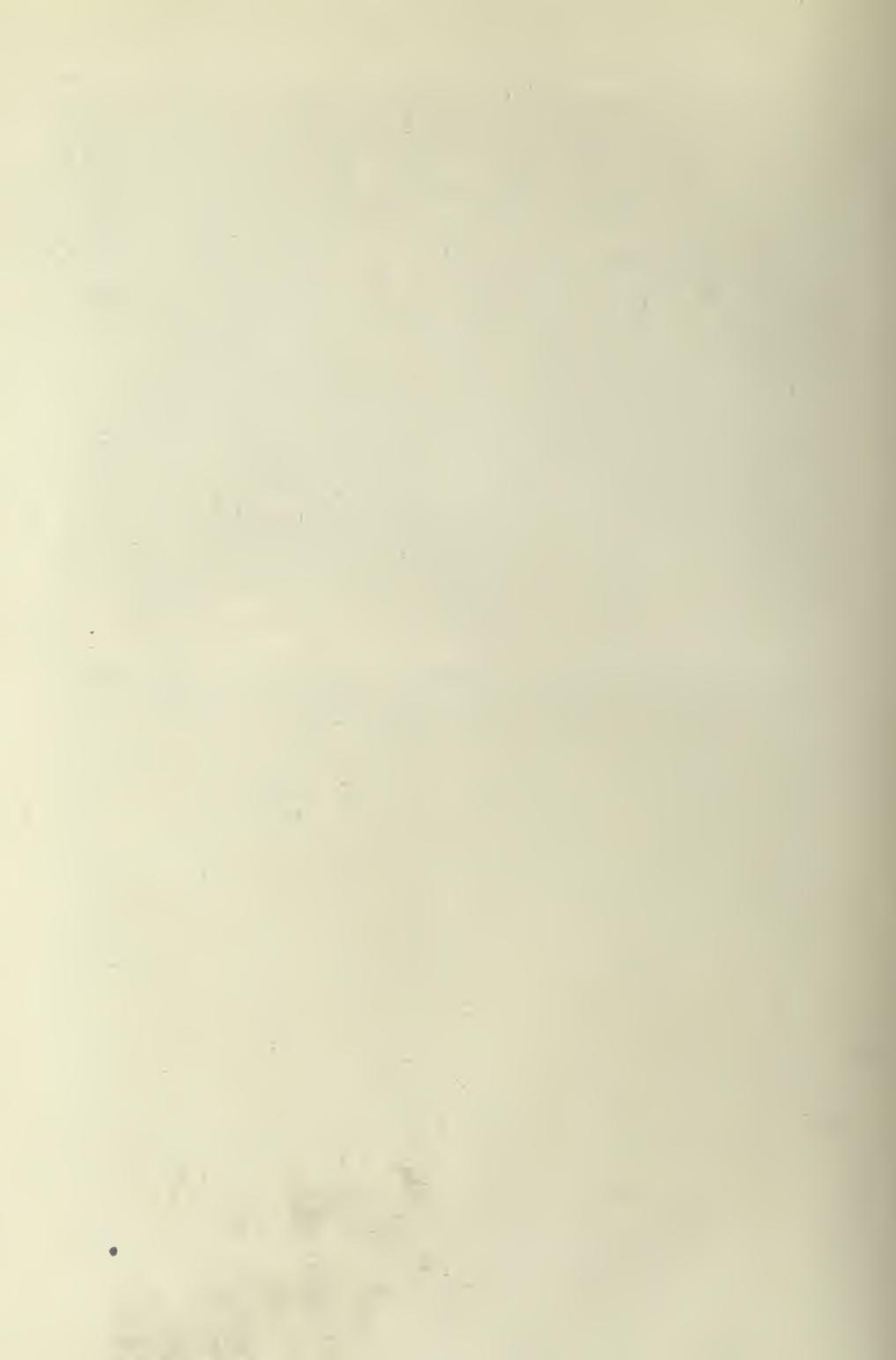
FIG. 24. LEADERS FROM BELOW THE SURFACE



FIG. 25. SHADOW OF LEADER ON BOTTOM IN 5 INCHES OF STILL WATER



FIG. 26. SHADOW OF FLY AND LEADER ON BOTTOM IN RIPPLY WATER





Fingers just entering surface.



Fingers below surface with reflection.

FIG. 27. FINGERS IN WATER AS SEEN FROM BELOW

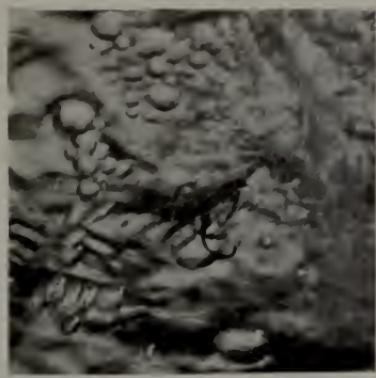


FIG. 28. SILVER-GREY FLY IN WHITE WATER, AS IN RAPIDS OR UNDER
A WATERFALL

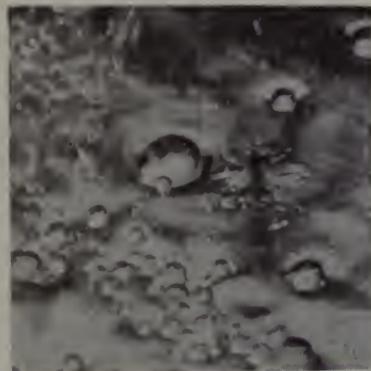


FIG. 29. BROWN HACKLE DRY FLY SUBMERGED IN WHITE WATER, AS
IN RAPIDS OR UNDER A WATERFALL



Water moving.



Water moving.



Water moving.



Water moving.



Water moving.



Water still, head close to surface. Teacups on bottom reflected against lower side of surface.

FIG. 30. AS THE FISH SEES THE ANGLER. AUTHOR AT END OF TANK
PHOTOGRAPHED FROM THE POSITION OF THE FISH UNDER
THE WATER



Fly and reflection against teacup on bottom.



Fly and reflection further apart.



Fly and reflection coming together.



Note wing flash.



Note flash of tail.



Note wing flash and leader passing surface.

FIG. 31. ERECT WING WET FLY



In motion on surface.



Bubbles below surface.



Brown hackle on surface from above.



Bubbles below surface.



Bubbles near surface.



Moving at surface.

FIG. 32. BROWN HACKLE DRY FLY CARRYING BUBBLES



Outside window.



At edge of window.



Far outside window.



At surface.



Moving at surface.



Bubbles at surface.

FIG. 33. WHIRLING DUNN DRY FLY SUBMERGED CARRYING BUBBLES



Reflection and fly together against dark bottom.



Reflection and fly together on light bottom.



Reflection and fly near light bottom.



Reflection and fly near light bottom.



Reflection and fly apart, light bottom.



Reflection and fly apart, dark bottom.

FIG. 34. ALUMINUM FOIL SHOWING REFLECTION, AGAINST DARK AND LIGHT BOTTOM, REFLECTED ON THE SURFACE

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made the leader a brownish color and also opaque. In the tank the visibility was less than half that of any other gut I have found. I want very much to try this out in comparison with the gut I have been using for salmon leaders. I believe it will be much better and take more fish.

If the leader is on the surface, as shown in Figure 24, it becomes very visible by the light-condenser effects. The illustration shows a leader .006 inch on the surface, and the same under the surface where it is almost invisible, showing only a thin line. This has taught me not to oil the leader near the fly and let it go below the surface where it will be less easily seen. I oil it farther up to prevent it from sinking, so that I can easily retrieve my cast. In very bright sunlight and clear still water a leader even of a very small size will cast a very heavy shadow on the bottom, depending somewhat on the depth. But I have noticed a leader of .008-inch diameter cast a shadow as large as my thumb in two feet of water. This shadow often scares salmon extremely and they will not take a fly if it passes over them. Under these conditions the fisherman must either wait until there is no shadow or cast so that the fly only passes over the fish and not the shadow.

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This can often be done by careful study and I have frequently taken fish in this way when it could not have been done if I had paid no attention to the shadow. The illustration (Figure 25) shows the shadow of the leader .008-inch diameter on the bottom in about five inches of water. In the second picture the water is a little disturbed. When there are many waves they also throw shadows on the bottom, and the fish is accustomed to these and pays no attention to the shadow cast by the fly and leader. The two pictures of the fly and leader taken about the same point as the other two, show the shadows on the bottom. They are hard to distinguish from shadows made by the waves. (Figure 26.)

When an object is part in and part out of the water, as a fisherman wading is, the fish sees the part under the water directly and its reflection against the surface upside-down. The fisherman's legs appear to the fish directly and upside-down and the body of the fisherman above the water appears through the fish's window.

My fingers passed through the surface show directly and then an upside-down reflection, and you can see the hand outside the window above. (Figure 27.)

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Flies in white water appear among the bubbles which are very brilliant in the bright light. A wet fly (Figure 28), as shown, is very visible against the bright bubbles and it is no wonder fish readily take them under these conditions. They must be very visible from below the bubble area which is generally not very deep. The brown hackle dry fly (Figure 29) is not nearly so visible among the bubbles.

Figure 30 shows portraits of the author at the end of the tank taken up through the water. In some cases the water was moving with wind, and in others almost still. The fish sees anything from Raphael's Cherub through Cubist art to Hindenburg, and all in rapid succession; no wonder he cannot always recognize me. The light shirt worn is almost blended with the sky in some of the pictures. This indicates that light clothes are less visible against a sky background. On the other hand no doubt dark clothes would be less easily seen against a background of trees or rocks.

Figures to 31 show an erect wing fly with plenty of hackle below the surface. The large circular white spot is a teacup on the bottom of the tank reflected against the surface. The reflections of

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the fly are very slight against the window, but when back of the window they are marked. Note the flash of the wing in No. 4 and No. 6 in Figure 31. Also note the hole which the leader makes entering the surface. This fly was well wet and carried no bubbles.

Figure 32 shows a brown hackle both below and on the surface. This fly is carrying bubbles when below the surface and you can see their light effects. No. 3 is the same fly photographed on the surface of the tank from above.

Figure 33 shows a Whirling Dunn. No. 1 shows the bubbles carried down and the light they give off. In Nos. 4, 5, 6 the fly is in motion; naturally the light flashes are more brilliant.

Figure 34 shows two pairs of my aluminum foil winged flies.

Every one has noticed that he is more likely to take a trout or salmon with a new fly than with one that has been used. This seems to be due to the new fly having stiffer hackles and making better light spots on the surface. If below the surface it may carry bubbles and be more visible. The fisherman thinks the new pattern is better because it takes the fish, whereas the real cause of its superiority lies in its greater visibility.

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What I have seen in the tank will have a most profound effect on my methods of fishing in the future, and I am sure I can now understand many of the happenings along the stream far better. It will be an added interest to study and try to understand fly fishing in the light of optical laws which govern what the fish sees.

CHAPTER IV

WET-FLY FISHING

THE wet fly is the regular orthodox way of fishing for salmon. It has been described in countless books and papers for many years much more vividly than I could possibly do it. Therefore, I am not going to tell about it fully, but would like to make a few suggestions which may be helpful.

In a recent English book, "Animal Life under Water," by Francis Ward, the author attributes the attractiveness of a fly largely to the flash it gives in the water as it moves. He has taken under water photographs showing the flash which is due to the action of light reflected from it. I have no doubt at all that this is true and explains much we do not understand. My chapter on "What the Fish Sees" is an elaboration of this idea together with further experiments of my own. Mr. Ward shows that a small fish in the water, due to the shining scales and colors, which act as mirrors in the water and reflect the surroundings, is almost invisible to the other fish. When, however, a fish turns and twists in the water, he catches the

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lights and attracts the attention of other fish. The fly also catches the light, particularly if it carries air-bubbles along its feathers. I have frequently found that I caught more fish if I oiled my wet flies. They reflect the light better under water and carry down more air. You will often notice a fish come short to the fly, often several times. I find this may be due to the fact that from where the fish is laying the fly shows up with a flash as it passes him, but when he starts toward it, the light is such that the flash has disappeared and he is no longer attracted to the fly. Often in this case if the fly is cast from a different position, and led past the fish at another angle to the light, he will take it readily. In the chapter on the fly from the point of view of the fish, I have endeavored to make clear the part played by the reflection of the fly against the upper surface of the water when the fly is beyond the window of the fish and the water surface is still. If the fish is lying well below the fly, from where he sees it, the fly itself is in shadow, while the upper surface of the fly is brilliantly illuminated from above. The reflection is, therefore, from this well-lighted surface, and so is brighter than the real fly to the eye of the fish. He naturally starts for the most

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visible object, which is the reflection, and tries to take it instead of the real fly. To the fisherman this fish seems to "come short." This, however, will not happen so often when the surface of the water is broken by waves or ripples. The reflection is partially or even totally destroyed by the broken surface, and the fish, therefore, comes for the real fly only. All fishermen have had the experience of missing fish in still water, and we all know that swift water is much easier and a surer place to hook them. Also, often when a fish "comes short" the fly is of the wrong size or the leader is too large and scares him. I have come more and more to think that the relative positions of the fly and the light to the fish have much more to do with his turning away. This is evidenced by the fact that he often takes it better if it is pulled faster as he comes toward it. The faster motion no doubt makes the flash in the water. Frequently salmon lying in the current pay no attention to a fly if it is swung past their noses on the turn of the leader, but the same fish will take it if it is pulled directly away from them up-stream. This must be due to the light effects, as a small fly must look very small indeed if perceived from the back.

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The speed with which a fly nears and goes past a fish has everything to do with its attractiveness to him. At times the fly must move just as slowly as possible, with a steady motion. At other times it must be cast up-stream and drawn past the fish rather fast, then lowered back and drawn up a second time; this manœuvre makes him come. I have never noticed any good results from shaking the tip of the rod. If you watch the fly in the water when some one is doing this, you will see that it does not affect the fly at all, as all the motion is taken up by the line and leader long before it reaches the fly.

I remember fishing one afternoon with Mr. Monell on the Upsalquitch in very clear water. We could see many salmon in all the good places, and he was giving me pointers. One pool had some brush and logs at the side and several fish were lying close to them. I made many casts for them and failed to raise any. He then took my rod and cast across the stream about thirty or forty feet above the fish and let the fly drift down with a slack leader. When it came about ten feet from the fish he raised the tip of the rod and tightened a little on the line. This caused the fly to swing across the current directly in front of the

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fish, and when it had just passed them he pulled it up-stream slowly. A salmon rushed after it and was hooked and soon landed. In this way he took three fish where I had failed to raise any with the same tackle. This procedure made the fly travel in the proper way for these fish, but it also made it run much deeper in the water. Since that time I have experimented a great deal with the depth of a wet fly and find that this is often the deciding factor between success and failure. The fly can be made to run deeper by allowing it to sink before pulling it, or you can use a fly made heavier by being tied over a lead body. I use many of these flies, especially in small sizes from Nos. 8 to 12. These small flies generally move too close to the surface and it is hard to get them to move far enough down. In the Spring Pool on the upper Restigouche this summer, I noticed three salmon lying along the ledge where some spring water came in. They were about three feet under the surface. The temperature of the river was seventy degrees Fahr. so they were naturally sluggish. A dry fly or any kind of wet fly near the surface failed to move them. I then put on a very fine leader .006 diameter and a No. 12 wet fly and arranged a little fine lead wire at the head of the

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fly. This was cast about twenty feet above the fish and allowed to sink, and pulled a little just as it came to the salmon. On the first cast I hooked one, and succeeded in hooking all three before we left. I am sure I could not have hooked any of them with flies near the surface. I noticed one of these fish turn and take the fly as it was dragging over the surface of the ledge, acting almost like a sucker. Several times this season I have fished swift water carefully with a wet fly when I was sure it held salmon, and failed to raise them. After adding lead to the fly and so making it run deeper in the water, I raised the fish.

I believe that the preference which many anglers have for the double-hooked flies is caused by the fact that these flies are heavier and therefore travel deeper down than a single-hooked fly. I do not use them as they cast badly and make a disagreeable sound as they strike the water. I also find I lose more fish on them after they are hooked.

All salmon fishermen know that when a pool is fished in the regular manner with a fly, it soon gets "stirred up" and no more fish will rise. The longer it is fished the less chance there is of taking any salmon. This is generally because the line

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and leader are below the surface of the water and scare the fish as they pass over them. And in fishing a pool with a wet fly the line and leader necessarily cover the whole pool. It is hard to realize the alarming effect of a line and leader on a salmon, especially if it is close to him. On the other hand, a line on the surface of the water has no such effect on him if it does not pass directly over him. A salmon probably will not move much from his position, but it will be impossible to get him to come after he is once alarmed unless a considerable time intervenes. It is probably for this reason that it is customary to rest a fish which had raised short. In my own experience I do this only if he has risen in such a way that I am sure he saw the line and leader; if not, I cast again at once. If he does not come again at once I try to make the fly pass the place at a different speed. Such a fish evidently wanted the fly. I cannot see why he should want it any less because he has made a try for it, but if he saw anything to alarm him, there is every reason for him not to come any more; the only chance is to wait until he has forgotten his alarm and returns to his former position.

The place where a wet fly strikes the water with reference to the position of the salmon, is most

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important for several reasons. If the fly strikes too close to the fish it may alarm him by the splash, while if it strikes the proper distance away the splash may serve only to attract his attention, and the light flash caused by the breaking of the surface may make him come. It is always well to begin putting the fly some distance from the place you know the fish to be, and if he shows no sign of interest, cast the fly so that it falls gradually nearer and nearer to the fish. How often have I watched fishermen beginning in a pool place their fly in the best place for the fish on the first cast, thereby scaring the fish so that they have no further chance of raising them. If they had only begun with the fly farther away and let it swing in, they would almost certainly have hooked the fish.

Quite often salmon are very slow and want to see the fly an appreciable time before deciding to take it. You will raise such a fish when the fly goes by him slowly or works up and down in his sight when there is no chance of attracting his attention if the fly swings past him fast. I have over and over again fished a pool and taken a fish after my friends had just thrashed the water for a long time, simply because I knew the proper rate to have the fly travel for these particular

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fish and how to cast it and lead it to make the fly go at just the proper rate when it was passing by where the salmon could see it. They complain that this is luck or black art. It is neither, it is simply years of observation and study and is no accident. A good fisherman must have a universal memory and be an acute observer. If your experience has shown you what to do you can generally find a way.

People often ask if it is not difficult to play a good-sized salmon on a light rod and does not take a long time to land him. When it is properly done a salmon can be killed very quickly with a light rod, but it all depends on the way it is handled. The salmon is not usually a very strong fish, he makes rapid rushes and jumps, but soon tires if he is made to swim fast. With a light rod the trick is to make him swim as much and as fast as possible. Use the pull of the line to irritate him and not to check his run. Make him run more and never hold a fish hard enough to stop him unless he is going into some obstacle or around a boulder or log. Most fishermen try to fight the fish by holding him back. This is not as tiring as making him swim, particularly as making him swim against the current. The rod should be held vertical and

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a constant strain kept up so he will never forget he is hooked and must swim all the time. The reel should have a light drag so that the fish can pull out the line with little effort when he runs, while the rod is still held vertical. In this way no excessive strain can come on the fly or leader. A very small pull will generally make a large salmon run; a sulky fish is a great exception. I have only had three or four in all my experience, and I have probably taken 2,000 salmon, so that this contingency need scarcely be considered at all. It is most necessary with light tackle to form a habit of winding the reel up properly and having the line perfectly distributed on the spool. This is done by guiding the line on the reel with the left thumb and forefinger. I have often seen fish lost by having the line carelessly wound on the reel barrel, usually too high on one side so that it falls over and makes a tangle. This checks the outward feed of the line and generally causes a break in the tackle. In large water it is no unusual thing for salmon to run 200 or 300 feet straight away, and I have seen them go 600 feet. I know they can't last long at this pace and do all I can to push them on. This summer we were called to lunch, and just as the other boat started, I hooked a good

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fish. My daughter said: "That is a shame, we shall all be late." I said I should be along in ten minutes, and Mr. Regan laughed as he took out his watch. He said I could not land a fish in ten minutes. The pool was large and not swift. I held the fish very lightly and made him run hard. He jumped twice when I had him landed on the bank, when, by Regan's watch, it was seven minutes exactly. The fish was eighteen pounds and the rod six and a quarter ounces.

Except for one sulking salmon I have never had a salmon on for an hour, and forty-five minutes is very unusual for me. Of course if you can get below the fish and make him swim up-stream, he tires very quickly. Gaffing is a highly skilled game and only the best guides never make a miss. When a salmon is pulled toward the man in the water, the fish pays no attention if the man does not move, and the fish can be brought up close to him so that a single stroke should do the gaffing, and the fish ought almost never to be missed. The guide should not try to gaff until he is absolutely certain of his fish. Instead of this the guides often walk up to the fish in the water instead of placing themselves in the proper place and letting the angler bring the fish to them. As soon as the

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salmon sees them in motion he is badly frightened, and it is only when he is all in that the angler can bring him up. I have seen many salmon lost by just this mistake.

I feel very sure that taking the season through I would lose many less fish on light tackle than on heavy tackle, and I believe I would land them more rapidly as a usual thing. This does not seem quite natural, but I have persuaded a number of fishermen of the fact.

There is one trick in handling salmon few fishermen seem to know. I am going to give a couple of instances where it was the only way to save the fish and I hope others will try it.

Returning from a trip up Gambo Lake to the Triton Brook one year, we found a large run of salmon coming in from the sea. The pool below the dam of the lake held a large number but most of the fish seemed to be located at the outlet of the lake just where the water passed through an eight-foot sluiceway. Below this was a pile of logs, and if the fish went through the sluice every one was inevitably lost. A couple of fishermen had been trying to get them for two days and had not succeeded in capturing a single one. They told us to go ahead and see what we could do. I

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looked the place over and made up my mind that I could not keep them out of the sluice if they wanted to go there, so that the only thing to do was to make them run into the lake where I could play them easily. Knowing that a salmon always fights away from the pull of the leader I stood on the dam and cast into the lake just above the sluice about twenty or thirty feet. As the fly came toward the sluice the salmon would rise and as I saw him come I threw a loose line into the rapid sluice. The pull of this line made the salmon rush out into the lake where I could fight him easily and keep him away from the sluice. I took seven fish in succession in this way and did not lose a single salmon on the sluice.

Another instance of the same trick happened when my son took his first fish. It was on the Indian River at the tail of a rocky pool above some rough rapids. We were obliged to cast from a cliff about ten feet above the stream and could not move from our position without dangerous climbing. We could see a dozen or so salmon below us at the tail of the pool. Ashley cast out and soon hooked a ten-pound fish which ran up into the pool and was easily gaffed. He remarked that he did not think much of salmon as game fish;

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they were too easy. I told him to just wait a bit and they would soon teach him something. The next fish jumped and ran into the pool and then started for the sea. He could not hold him and as he reached the white water he yelled: "What shall I do? I can't get him back." I told him to smash the tackle and save the line. When he was fitted out again he wanted me to show him how to save such fish. I soon hooked one which started to play the same trick. When he reached the lip of the pool I had a large loop of loose line ready and threw this past the fish into the rapid water beyond. The pull of the line at once turned the fish and he came back into the pool and was landed. I have used this trick many times and have often, though not always, succeeded in turning salmon. It is surprising how seldom the salmon gets off and how many fish can be saved in this way in difficult places. This is a trick peculiar to salmon fishing and is great sport.

CHAPTER V

DRY-FLY FISHING

WHEN one sees a number of salmon side by side as they often lie in the tail of a pool and watches a regular salmon-fly pass over them or past their very noses without any attention or motion on their part, except to move away if the fly or leader comes too close, one is tempted to wonder if these fish will really take a fly at all under these conditions. And yet it is these very fish at this time which will furnish the best of sport. For some reason they are in a state of mind where the wet fly does not attract them at all. Perhaps they have reverted to the mental state of parr, taking insects off the surface. Let a real fly or a small butterfly float over them and see how often one will rise and suck it in. It was observing this which made me try a dry fly, with not much success at first, because I did not know how to use it, but I soon made a proper cast, quite by accident, and raised a fish. The fly was a Greenwell's Glory No. 14 hook. I soon observed that the fish rose on some kinds of casts, but never on others,

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with considerable regularity. I was interested to discover which casts caused them to rise and which casts were wrong. The place was on the Indian River in New Foundland at the outlet of a lake where there were a large number of salmon. For a week previously they had bitten well, and we had had good sport, but suddenly, overnight, the fishing had stopped. Conditions had changed. The water temperature had risen to above sixty degrees Fahr. The fish were there, I could see them, so there was no use going anywhere else. If I could not get them there I had little chance elsewhere, so I settled down to find out how to catch them.

The first thing to discover was what effect the leader and its shadow had on the fish. To discern this, I tied leaders of various sizes, going down to the finest gut made, .004-inch diameter and up to regular salmon gut .020-inch diameter. I always carry a small gauge for measuring the size in order to make the leader of the proper taper so it will cast well. I soon found when the sun was out I raised many more fish with fine gut, and those which did come up, almost invariably got the fly, while those which raised on the coarse gut, very often turned away just before taking the fly in their mouth; they seemed to see the leader.

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The problem became largely one of fishing so that they would not see the leader. This can be done in two ways: first, by having it as thin as possible. This is not very practical because it is difficult to hook and land a fish of considerable size on a gut which will break under a strain of a pound and a half or less. The second way is to see if the leader could not be cast so that they would not see it so readily. I soon found this to be possible to a certain extent. If the leader extends up-stream from the salmon for a couple of feet or more it is in a straight line away from him when he comes to take the fly, and he is not so likely to see it in time to avoid the fly. This is the key to dry-fly fishing for salmon. (Figure 35.) Have the fly float directly over the fish so that he will see it with both eyes and have the leader lead directly away from him. If the fly was pulled on the surface, I found that he was far less likely to rise, and a fly partly submerged almost never takes a fish. It must float on the surface of the water well up on the top of its hackles. You will notice in the chapter on "What the Fish Sees," pictures of dry flies in this position. The light effects are what attract the fish, because this is what occurs when natural insects float on the



FIG. 35. A PERFECT DRY-FLY CAST FOR SALMON



FIG. 36. A POOR DRY-FLY CAST FOR SALMON

THE AUTHOR AND HIS SON DRY-FLY FISHING IN SLOW WATER

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surface. Be this as it may, the fact remains that to be successful, you must either use the fly on top, or submerged. A dry fly pulled below the surface often works well. It seems as if the fish saw the fly on the surface and did not take it but decided to do so when it was being pulled away below the surface. Under some conditions, this method takes fish better than any other. One afternoon recently I hooked fifteen fish nearly all in this way and found it better than a dry or a wet fly used alone.

In regular fishing I find that too many fish are lost by breaking the leader in hooking them if the size of the leader near the fly is less than .010. I have gut of this size which pulls four pounds, but this is very exceptional. The usual gut pulls about two to two and one-half pounds in this size. When I find that fish are not being hooked and are missing the fly I put on smaller gut. In order not to break this fine tackle, I have had made a special form of rod which is adapted to this purpose. It is ten feet six inches long, the greatest length which can be continuously used in one hand without undue fatigue. The weight is seven ounces without the extra hand piece below the reel which I use in order not to become too tired

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in my left wrist if I hook a large fish and have to play him a long time. I can rest the butt of the rod against my body and get at the reel with my right hand without danger of getting the handle tangled in my clothes. Such a rod will not pull over one pound when the tip is up and the greatest strain possible put on the butt. This will not stop or turn a good-sized salmon but will tire him out quickly. Of course the pleasure of playing a salmon on good heavy tackle, and giving him the butt and making him jump, is sacrificed to the pleasure of seeing him rise to the surface and hooking him, often at close range. But with this tackle I raise and hook many more fish. Such a rod works best with a tapered E line about .035-inch diameter in the heavy part. If it is well handled it will put a fly ninety feet and lay it down lightly. I have hooked fish at this distance quite often, and regularly fish at seventy feet with ease. The leader must be very long for dry-fly work, as I find the line floating over the fish or striking the water scares them badly. I use regularly a fourteen-foot leader with the large end about .020-inch diameter. Often I have found that this is not long enough and added three to six feet more finer gut.

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It is very hard for the novice to tell when the salmon is alarmed. He does not usually run away as does the trout, unless he is very frightened indeed. If you watch carefully, the only thing you can observe is that he settles a little toward the bottom and often changes the motion of his fins and tail. When this happens a salmon will not rise and there is no use casting over him just then. On the other hand, if he begins to work his front fins faster and raises his head or whole body in the water as the fly passes over him, he is taking notice and will most surely rise to the fly if it is put over him enough times in the proper way. When I have seen him take notice I have sometimes kept at him an hour or so and almost invariably raised him to the fly. This is quite the opposite from the effect of a wet fly, which offers its greatest attraction when first seen, and the probability that he will take it decreases with the number of times the salmon sees it. It is for this reason that the old fishermen rest a fish which has risen short and are certain that they have more chance of taking him if he gets a fresh view of the fly after an interval. I feel that the warm water has, in some mysterious way, brought to the surface of consciousness the habits formed during the parr

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stage of growth of taking insects on the surface, and that the adult salmon behaves in a similar way, driven on by these old habits which become his dominant impulse because he is cut off from his regular feeding on fish, squid, etc.

It is on this theory that I have worked in studying the dry fly, and the remarkable results which I will describe later seem to bear out my conception. Dry-fly fishing seems to be regulated by the water temperature and the lateness of the season. Until the season of 1921 I had always supposed that dry-fly fishing was better the later it was practiced; but this year about August 2d I found that in some places salmon would not take a dry fly when they had taken it readily July 12th to 15th. This may be due to the fact that this season was very exceptional and the fish were much further advanced toward spawning than usual. In other years I have always had the best of dry-fly fishing on August 15th and have had excellent sport in New Foundland in September.

It has been my experience that salmon do not take a dry fly well when the water is below fifty-eight degrees Fahr. and begin to take it well when the water is sixty degrees Fahr. The best dry-fly condition is with the water sixty degrees to

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sixty-six degrees Fahr. It may not be generally known, but the long Northern days warm up salmon rivers greatly before night. On one trip I frequently noticed a rise of ten degrees from 8 A. M. to 5 P. M. The dry flies used are described in the chapter on tackle. The size seems to be very important; at times the small flies, even as small as No. 16, seem to be better while at other times very large flies as big as two-inch diameter seem to raise more fish. It perhaps somewhat depends on the depth of the fish in the water but more probably on the clearness and light at the time, or the background in view from the window of the fish.

I remember one day fishing a run on the Upsilon-quitch with Mr. Monell. The fish were in about two to three feet of water, and under a moderate current running rather smooth. The bottom was covered with stones of about a foot to two feet in diameter. I was using a small gray hackle of about three-quarters of an inch in diameter. He was using a larger gray hackle of the same pattern, an inch and a quarter to an inch and a half in diameter. We took in all about forty fish in the afternoon. Those I got ran from six to eight pounds, while those he hooked ran from ten to

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twelve pounds. We did this in order to see whether the larger fly took the larger fish, and it certainly proved so in this case. Recently in the Restigouche I could only raise one fish on the large inch-and-a-half hackle, and got as many as I wanted on the smaller three-quarter-inch hackle. These fish ran from twelve to eighteen pounds. Another time at The Forks on the Upsalquitch on a clear hot afternoon, I could not raise any among a bunch of fish along a ledge with the three-quarter-inch nor the one-and-a-half-inch-diameter flies. I went into camp and tied the largest hackle I could, over two and a quarter inches in diameter, and immediately hooked three fish in succession. It will be seen from this that no general rule can be given for the fly to use at all times; a man must be a fisherman to know. He should experiment and find out the best size for each day.

Recently I had a most interesting example of how the diameter of a leader affects the number of fish hooked. I was fishing the run above Jimmy's Hole on the Restigouche and took one salmon from the fifteen or twenty spread across the bar at the top in about two feet of water. The leader was twelve feet long and .014-inch diameter at the small end. I raised about twenty fish in suc-

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cession, but failed to hook a single one. They all seemed to miss the fly. After spending about three-quarters of an hour in this way, to make sure of the matter, I put on a thin end about .010-inch diameter and four feet long, making the leader sixteen feet long. This did two things: it made the leader less visible near the fly and it enabled me to cast the fly more gently on the water so that it floated up better on the hackles. The result was remarkable; I hooked seven fish in succession, missing only a few of those which rose. This experiment satisfied me that my tackle had not been right in the first place. Another time, at the Nine Mile Pool on the Northwest branch of the Upsalquitch on a very bright clear hot day, we failed to get any fish in the run at the top but could see a large number about three feet below the surface in the centre of the pool in deep water. I put on a dry fly with a .010-inch leader and failed to raise any fish at all; I then got out a very fine drawn gut leader about nine feet long and .005-inch diameter, and added it to the other leader, making in all about twenty feet, and used the same fly, but took a very light 4-oz. trout rod so as not to break the fine gut. On the second cast I hooked a fish, and by holding very gently, finally made him

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come down to the gaff in the shallow water at the tail of the pool. In this way I hooked and landed five, none over ten pounds or under eight pounds. A scow with horses then came through the pool, and scared the fish so that I could not get any more before we were obliged to leave. I was convinced that I could not have raised any at all in this pool with any ordinary leader. I never use a leader any finer than necessary, but always try very fine tackle if fish will not rise with my regular leaders. Of course I lose a lot of fish, but don't I have a good time doing it! Recently on the Spring Pool of the upper Restigouche I lost five fish in succession and then two more on the next pool, yet with all that I brought home two fish, which is two more than I should have had if I had not used fine tackle; besides I had a splendid day in place of a complete blank. The important thing to remember in dry-fly fishing is that the fly must pass directly over the fish. Near him will not do any good at all. For this reason the angler must know just where the fish is. This is generally accomplished by looking the pool over and seeing just where the salmon are located. It is an easy matter to do this with a canoe without unduly scaring the fish, and it often saves a lot of useless casting.

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Recently I carefully fished a ledgy pool where I had seen twenty-five fish the evening before, getting only one rise at the tail of the pool and missing him. After two hours' hard work we drifted over the pool and there was only one fish in it, at the tail; the rest had moved on in the night. Sometimes the current makes past a jutting point of rock behind the corner of which is a sure place for a salmon, if there is one in the pool. Such a place is always worth trying without looking, because if scared from there the fish may not return for some time, and if he is there, he is almost sure to rise in such a place.

Along ledges is a favorite place for dry-fly work because the fish are sure to lie in certain positions if there and the fly can be easily made to pass right over them. But it is at the tail of the pool that I love most to see them or in places where spring water comes in, because they are in plain sight and I can generally place myself in such a position that I can see them without alarming them at all. Very often I can get within thirty or forty feet of them and witness the whole performance. It happened often that both Mr. La Branche and I found it possible to take the larger number of fish in such a bunch; Mr. La Branche on one occasion

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found seven fish together and got six of them before dark. On another occasion I found three fish in about two feet of water and finally got all three, but as a general rule I expect to hook from ten to twenty per cent of the fish I cast over in this way. It is very rare that I cannot raise any of them, and then only when it is very hot and clear in the middle of the day.

We will now transport ourselves to a salmon river in late July or early August and see just what will happen. The time of day will be 11 A. M., the pool, a long one with a rippy run in at the top and a deep-water centre and a tail-end with the bottom of stones of the size of your hand to two feet in diameter.

We come to the pool at the top and I stand up in the canoe and let the guide paddle carefully, not using his steel-shod pole which scares the fish. We drift down the side of the current at the top and see no sign of fish. In the centre of the pool are several salmon in deep water along ledges; as the canoe nears the tail, we draw to one side and look carefully in a small depression caused by ice or a log jam. Here are six salmon with their noses pointing up-stream. The water is not over three feet deep at most and getting gradually

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shallower toward the land. We carefully back the canoe and pull it up out of the way and the guide climbs up on a projecting log where he can see the fish, and tell me if the fly passes over them and what they do. I get out my ten-foot-six-inch rod with a fourteen-foot leader and a gray hackle fly and wade into position. I always fish on my feet and wade if possible. A canoe is very hard to fish from with a dry fly because it scares the fish and because it is necessary to make a disturbance when you move. In dry-fly fishing the position of the fly, the leader, and the line are all of them important and it is hard to judge where to place yourself to get a perfect cast. Taking into consideration the wind and the current, which make a difference, I always start in well below the fish and to one side so that they do not see me at all. The diagram (Figure 37) shows the position and the banks of the river; my position will be about forty feet to the right of the fish and perhaps fifteen feet below them. I get out my line, casting in the air and up-stream, along the bank, until I judge that I have the right amount of line out, so that the fly will light three or four feet up-stream from the nearest fish and directly in line with him. The fly is well oiled with a mixture of albo-

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lene and kerosene in equal parts and floats well; the leader and line are carefully greased with deer's fat and float on the surface. The fly is cast

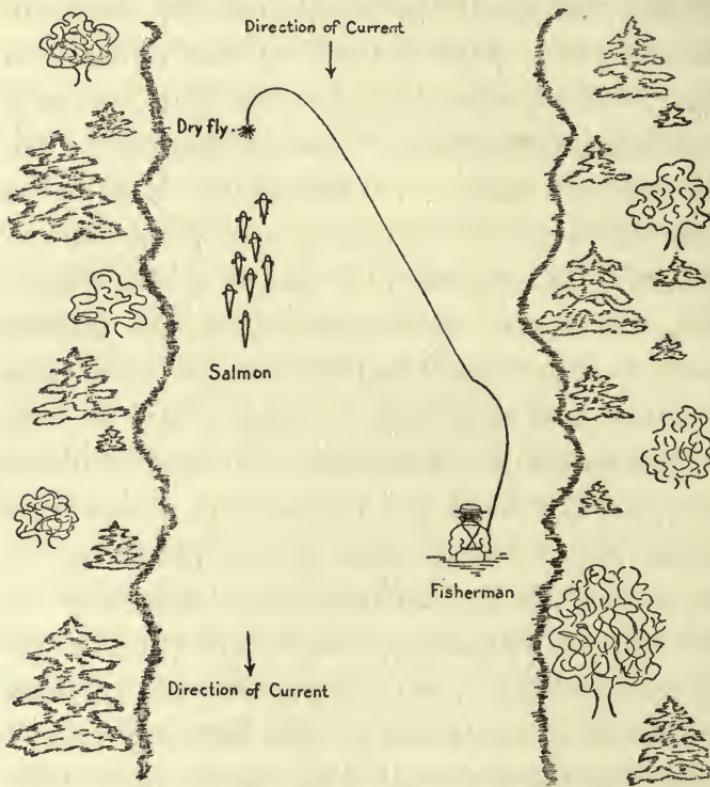


FIG. 37. DRY-FLY FISHING WITH CURL IN LEADER

with a curl in the leader so that it floats right over the fish. This is best done by shooting the line through guides and checking it with the left hand before the fly lights. This jerks the fly back and

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causes a curl. A little practice will soon teach the trick. The salmon seems to pay no attention to the fly, but his head rises visibly from the bottom. A second cast does not come so close over him and the guide says the fly is too near to me. I lengthen out the casts a little and place the fly just right, about two feet in front of him. As it floats down over him I see him rise and come rather slowly to the surface. As his head comes up I hear the sucking noise which is made by closing the gill plates and suddenly opening the mouth causing the fly to enter. I have been fishing trout too much this year and strike quickly and pull the fly away before the fish gets it. It is bad work, and I have to take my punishment by waiting until the salmon resumes his position in the group. They generally take up almost the same position as before. I begin by casting again, and in a few casts the guide says "the fly is passing just over him." This time he does not rise directly up as before but turns after the fly has passed and gets below it, rises and takes it with a great rush. There was no missing this rise, and a lifting of the line sets the fly and the fight is on. He runs a hundred feet or so and jumps into the air about six feet clear of the water, tumbling over directly away

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from me. This kind of leap is very likely to lose the salmon, as he almost invariably hits the leader with his tail when he jumps. There is a conviction among guides that the salmon always hits the leader and that he causes splits in his tail by so doing. The number of splits in his tail corresponds to the number of jumps. I have generally found this to be the case, but it may be only a coincidence. The salmon runs up to the head of the pool and then down to the deep water where he begins to "chug," as it is called; this is jerking the head against the pull of the line to loosen the hook. Salmon generally do this when they are lightly hooked and often get off. I always dislike to feel it. The only thing to do is to hold them very lightly so they will not have much strain to work against. They generally soon stop and begin to run again if they don't tear out. The fish jumps a second time and makes for the end of the pool with the evident intention of going down-stream. I ease the strain on him as much as possible and run along the bank and get below him; this turns him up-stream, as they generally fight away from the strain on the line. Bearing right to the edge of the swift water he turns and goes up into the pool and makes runs, getting shorter and shorter as

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the strain of the line and fighting the current gradually tire him out. With the light rod it often takes quite a time to get a fish close enough to gaff; he makes many short runs as he sees the guide, but the pull of the line gradually brings him in and at last he is landed on the beach, a fine fifteen-pound fish. This is all right for a starter but there are five more fish there. We look and see that the disturbance of the pool has not caused them to move. Again I get into position for another cast and put the fly over the next nearest fish. Twenty casts or so fail to make him move in the least, so I cast a little farther over to the next two fish which are almost in line with each other; the second one moves upward, here is another chance for a rise. The fly lights only a few inches in front of his nose. He turns his head upward and instead of making a turn to take the fly he raises his head vertically upward and pushes his whole body out of water as far as the back fin with the fly in his mouth. The strike pulls him over and he seems astonished as he jumps at once four or five feet clear of the water, a fine fourteen-pound fish, and off he goes again across the pool directly over the bunch of fish I had been fishing for. This makes them restless and they take up

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entirely new positions. While playing my fish on the line I watched them and saw one of the fish I had noticed in the deep water swim slowly down out of the pool and swing into line like a cavalry-man taking his position in the ranks. It often happens while fishing the pool that more fish come into view from the deep water. One never knows what a salmon will do next. This one just ran out of the pool and down the rapids so that I had to call for the canoe, as he already had out over 400 feet of my 600 feet of line. I got in and reeled up as the canoe rapidly overtook him. We soon passed him and the strain down-stream caused him to stop and turn up. The current soon tired him out and we brought him to gaff in a little eddy at the side.

The fishing of this pool is characteristic of dry-fly fishing in July or August in low water. I could give various illustrations of endless incidents, but one experience I had this summer is so much more marked than any others that I shall take time to give it in full, as it shows the superiority of the dry fly over the wet fly in low clear water, better than any other story I could give. I have many witnesses to the facts as stated. The incidents occurred on the 11th, 12th, and 13th of

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July, 1921, on the upper Restigouche River below Kedgewick Junction. The water was very clear and low; the most unsatisfactory conditions in many years. One particularly hot day when the lower pools of our water were all empty but one (where I had taken two salmon from the eight in it), I decided to make a trip and see the fish in the big water below. As I passed the camp I saw some one on the porch and decided to ask if they were having any luck. Mr. B. was most polite and offered to show me the fish. He said: "We have not taken any in three days with four rods." When we got down to the bank he remarked that it was a pity that I did not have my tackle as I might try and see what I could do. I replied that I had my rods in my canoe, so he got into his *gaspé* and I into my canoe and we paddled down the current to the nearest pool. A brook comes in at the head of this pool and there were springs in a little slough at the side. Just abreast this in the cold water was an interesting sight—a school of salmon lying just below the surface extending for a space of twenty or thirty feet wide and perhaps 200 feet long, side by side in solid formation. I could not estimate the number. In size they seemed to be from twelve to thirty or forty pounds. It just

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made me tingle all over. Mr. B. said they would not take a fly and there was no use fishing for them, so we proceeded to swifter water entering another pool. The second pool was a very deep basin with a very smooth run in it at the top. When we arrived the boat scared the salmon from the upper run and somewhat from the lower run, but I could see several fish under the current along the edge. It was an ideal place to take them with a dry fly. This pool had already been fished that morning with a wet fly without result. The water temperature was seventy-two degrees Fahr. at 5 P. M. I called Mr. B.'s attention to a good fish visible along the current and put a gray hackle dry fly over him. He moved his fins and slightly raised his head. I remarked "he will come in a few casts." Mr. B. seemed very sceptical. On the third cast the fish rose, but I struck too quickly and missed him. He moved from his position and a few casts brought him up again, and this time there was no miss. I could not afford to make mistakes even if I was excited. He rose slowly and I gave him plenty of time and hooked him well. As he ran out I handed the five-ounce rod to Mr. B. and told him to play the fish, which he did with consummate skill and landed him in ten or fifteen

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minutes. I asked whether he wanted any more caught and he remarked in forceful English "give them HELL." I had three more rods in the boat and began at the upper run where the fish had returned by this time. The second cast raised the fish and a few more hooked one. By this time Mr. B. had landed the first sixteen-pound fish and I gave him the rod with the second fish. He seemed to be having the time of his life. These two stirred up the run pretty well but there was an eighteen-pound fish waiting in the smooth current and he was soon hooked and Mr. B. was finally converted to the dry fly. I did not feel like imposing further on a stranger who had been so polite and, as the fish rose slowly, we went back to camp. On the way as we were passing the great bunch of fish in the spring-water I asked if I could break off a hook and show him how they could be made to rise, so that he could catch them later with my type of flies. He told me to "go to it" and hook all I liked. I felt like a convict released from prison. Looking at that bunch just made shivers run up and down my back. I got the canoe in position about sixty feet to the side and placed a nice cast over the edge of the bunch. What I had expected happened, several fish came at once

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and they almost bumped each other, so none got the fly. The second cast was more successful and a nineteen-pound fish succeeded in beating the others to it. After one jump I handed the rod to Mr. B. who yelled for me to get another and called to the guide on the shore to bring Mr. A. down from the camp at once. By the time he arrived I was just hooking another fourteen-pound fish and Mr. A. got up to the boat just in time to take the rod and go off down the pool with the fish. Their two sons were in another boat just behind, so I took another rod and hooked one for them. It was a great disappointment that the smaller fish were always quicker than the larger ones, and as they composed the larger number, they always got the fly first. We only hooked a few fish of twenty pounds; most of them were fifteen, sixteen, eighteen pounds. But this is good fishing on light rods. We had three rods going all the time, and as one salmon was landed the rod was loaded with another fish in a few minutes. I lost all count, but the guides said I had fifty-four rises and hooked fourteen fish, of which they landed eleven. As this is about the usual proportion of rises to fish hooked, unless the angler is very lucky and skilful, I think it is probably a correct estimate. We finally

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stopped after two hours' fishing with eleven fish on the bank; more than the four rods had taken during the past week. Mr. B. remarked to Mr. A.: "You've been a damn fool and that is bad enough, but to be a damn fool for thirty years is the limit."

We parted after a drink (which still takes place in Canada) the best of friends, and with an urgent request to return the next morning and bring the Judge, whom I had left at my camp, and have a great day. We were to be there at nine o'clock but were a little late and found Mr. B. had gone down the river to the pool we were to fish. I passed the big fish school with longing eyes and pointed them out to the Judge, but we were guests and did as we were told. Soldier's Gulch is rather a swift run leading into the head of a long pool. It is on a curve giving an excellent chance to wade on the inner side of the circle. Mr. B. had fished the run with three drops down the pool in a big gaspé boat with a wet fly; he had failed to raise any at all and was glad to see us arrive. Logs lay along the shore, and I placed the Judge, who had no waders, on one at the head of the run where he could cast easily over the best water and where I could see many dark patches below the surface indicating bunches of salmon. I went a

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little below where I could use a dry fly along the edge of the current in the smooth water. It was not more than a few minutes before the Judge let out a yell for Mr. B. to come and take his rod and land the fish. I had to get out of the way to let the fish pass down-stream. Before the Judge could get his second rod in action I was in position again and had a fish hooked, which I handed to one of the boys who had come along.

At this point I had the best record in dry-fly fishing I ever hoped to make; three casts and three fish hooked. Why not? I could see them and there were dozens of them in just the right place to take. The circus went on all the morning with three rods in action nearly all the time. With this light tackle it takes time to land a fish. One of mine ran 600 feet in one run and another went down nearly half a mile and was made to come nearly all the way back by my getting below him; then there were logs and foul-hooked fish, and fish where other fish hit the leader and broke it off. I know I lost five and probably more. I did not care though, as I was too excited and there were plenty more. Finally the game ended with the place all stirred up and no more rises. Seventeen fish we took back in the boats.

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After a most excellent lunch at the camp, Mr. A. seemed very anxious to join the game and see just how we did it, so I took him in my boat to the large bunch of fish just below the camp to give him a chance. The weather had become dark and a few drops of rain were falling. I knew what would happen. We got into position with the other two boats below us, parallel to the bunch of fish, and the show began. Mr. A. was not used to my single-handed rod and could not place the fly in the proper way to raise the fish, so both the other boats had fish on before we did, but my light two-handed rod exactly suited him. He soon hooked a fish with this, leaving in his own boat to land him and letting me take one for myself, as all the other rods had fish on. The one which finally got the fly seemed a big one, as it took out the line fast and I could not turn him at all. However, in half an hour or so we got him up to the beach and found he was a sixteen-pound fish hooked in the belly with a five-ounce rod on a No. 8 fly hook. I kept this skin for my Neversink camp.

The next fish on the other rod ran at least 500 feet before Mr. B. could get up to take him; when 650 feet had run out, I held rather tight to turn him, and the backing broke at the reel. It

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had been on the reel for six years; I never expected to get out so much line. The line was oiled and floated on top of the water. Mr. B. rushed after it, picked it up and tied it to the end of his salmon line and reeled the knot down the guides and, by very skilful work, managed to land the fish and return me my line and leader. I never had that experience before.

That day's catch was about forty fish for the six rods, but we did not have them all together at one time for a photograph, as the men had put the morning's catch in the ice-house.

The next day was clear and hot, but we secured a good catch just the same of twenty-seven fish. The big bunch of fish was far more scary and difficult to raise as the four boats near them kept them nervous. I have no doubt a single canoe, sixty or seventy feet away at the side, could have continuously hooked fish, with well placed flies.

We parted from our new friends with the most cordial feelings and requests on their part to return another time. No party could ever have been more generously treated and entertained and we cannot thank them enough for giving us this opportunity to test my dry-fly methods where there was an abundance of fish. I have always thought

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that catching salmon varies directly with the number of salmon fished over and if the fishing was properly done over enough fish, they could always be taken, and there would be no blank days or possibly weeks. My recent experience has confirmed me in the opinion that the old-fashioned salmon-fishing methods in low clear water above sixty degrees Fahr. are the worst possible way to take salmon on a fly.

The rise of a salmon on a dry fly is a matter of great interest and I have endeavored to get a photograph of it many times. With the ordinary camera this only results in one view which may be taken any time during the rise. In the moving-picture film we took in August, 1921, fortunately we secured several rises on a dry fly and the pictures Figure 38 to Figure 47 show some of the successive stages of the rise and the striking of the fish. These are "cut-outs" from the film. You will notice the beginning of the rise and the increase in the size of the splash as the tail of the fish throws the water upward; then the tightening of the line due to the taking up of the slack which throws the drops of water into the air; and finally the fish hooked carrying the line up-stream and partly showing his back nearer to the fisher-

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man than the original break. This particular fish was about twenty-four and one-half pounds when landed.

There are many kinds of rises made by salmon, but this happens to be the only type we succeeded in photographing. I hope on my next trip to get many more such pictures.

The illustrations (Figures 35 and 36) show two dry-fly casts made while wading rather deeply into a current which was not very swift. Below the fly are a large number of salmon which are visible in some of the moving-picture films. The cast (Figure 35) is one in which the fly is coming down not in advance of the leader but with the leader lying across the stream. Such a cast is not likely to raise fish where the water is clear and they are hard to catch. The cast shown in Figure 35 is a perfect cast for catching salmon in this kind of water. The fly is coming down-stream first and the leader extends up-stream from the fly for a foot or so. In this position it is end-wise to the eye of the fish and is less visible to him. The slack line shown is purposely cast in order to avoid any danger of pulling the fly and also making it possible to float it naturally down the current. It further takes time to take up after the fish has



FIG. 38. DRY FLY FLOATING DOWN-STREAM



FIG. 39. BEGINNING OF THE RISE

RISE OF A 24-POUND SALMON TO A DRY FLY



FIG. 40. HEAD MAKES SPLASH



FIG. 41. HEAD THROWS WATER



FIG. 42. TAIL BEGINS TO THROW WATER



FIG. 43. TAIL THROWS WATER, HEAD DESCENDING



FIG. 44. BEGINNING OF THE STRIKE



FIG. 45. STRIKING



FIG. 46. STRIKING HARD



FIG. 47. HOOKED AND GOING UP-STREAM

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been seen to take the fly, and this insures time for him to get the fly in his mouth before the strike reaches the fly and pulls it away. A salmon is a large fish and makes a very visible wake and splash in the water, and very often a fisherman in his excitement pulls the fly away from him before he reaches it. On the other hand, when a salmon comes up straight from the bottom from deep water I have very often pulled it too late because they do not show in the water coming up vertically, and what the fisherman sees on the surface is the wake made by their tail after they have turned and gone down after having ejected the fly. This was the case one late evening in New Foundland in the Triton Brook, where I missed a large number of rises until my guide, who was above on the bank and who could see the fish as he came to the fly, told me I was striking too late. After that he called out when a fish was coming and I struck before I saw anything, and finally succeeded in hooking six fish in this way. These conditions, however, are very unusual; generally the fisherman strikes much too soon, as the salmon usually carries the fly in his mouth several feet before letting it go.

It is of course quite difficult to cast a fly as shown

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in the illustration and no one can do it every time, but practice will enable a good angler to do it very often. I usually let the line shoot through the guides and check it suddenly when the fly is well above the water, this will make a good curl cast very often. Another way is to cast a little sidewise and check the cast in the air with the rod. Each angler must work this out for himself as each has his own cast and it is hard to teach one person's mannerisms to another. No one can hope to be successful in dry-fly fishing under hard conditions until he has thoroughly mastered the casts and can make them up to seventy feet distance at least.

That there is some danger of getting into difficulties with light tackle is evidenced by the following story. Fortunately this does not happen very often.

One day in the Forks Pool on the Upsilonquitch, there were a number of salmon rising in deep water just at the end of the swift current. One would come out every few minutes, and they all seemed to be good sized fish. I cast for them with a wet fly in every conceivable way but could not get a single rise. It happened that I had a dry fly on a four-ounce trout-rod which I had been

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using on the grilse in the small pool above on the North West. I cast this out a number of times and let it float down the current where the fish were rising. At last one came at it with a great splash and was securely hooked. The Forks Pool, as the name implies, has two streams joining at the top. In the centre the water is about thirty feet deep. This fish ran across the pool and jumped, showing himself to be about twenty pounds in size. Of course I could not pull him about much with a four-ounce rod, and he did about as he pleased. In a few minutes he retired to the deep water and just sat absolutely still. I pulled all I could, rapped the butt of my rod with my knife, changed my position, and pulled from another direction, but it was all of no use. He was just like a log, and yet I could feel the fish. I sat down on a nearby log and watched, but nothing happened. The guides all came out to see me get beaten by a salmon and were having great fun at my expense. At last I suggested that they take two canoes and their steel-shod poles and go out in the pool and throw the poles down to the bottom and start the salmon. Two of the guides waded out in the tail of the pool to keep him from going out, as they said when he started he would certainly go down-

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stream. They threw the poles over and over again and we could hear them hit gravel bottom. Finally one hit near the salmon and he started straight for the tail of the pool. The men did their best, but he got by them and down he went, taking the line out so fast I thought he would get it all. He did get 700 feet before I got into a canoe. I only had 720 feet on the rod. We paddled after him. We were in such a hurry that I was in the stern and the guide in the bow. We rapidly gained on the fish, as he was not swimming very fast, and at last we caught up to him about a half-mile below in a rapid smooth run near a bank. The guide got out the gaff and as we passed over him made a lunge and gaffed the fish, but just as he raised him up the canoe passed under a projecting spruce log we neither of us had seen, as we had our eyes on the fish. As he raised up, the log caught him in the back of the neck and knocked him flat on the bottom of the canoe with the struggling salmon on his chest. I managed to save both the salmon and the rod, but the guide was a wreck for a couple of days. The fish was a hook-bill male, nineteen and one-half pounds. They tell me these sulking fish are generally males.

CHAPTER VI

NYMPH-FLY FISHING

IN the late season during July and August, one often notices salmon rolling in the pools. By this I mean coming out at the surface of the water, showing their heads and generally their back fins before going down. They seem to be moving very slowly as if looking for food. Often if you are close to them you can hear the "suck" noise which they make with their mouth as they take something below or on the surface. At such a time it is often impossible to notice any flies on the top of the water and most people suppose the salmon are just playing around. Their behavior, however, is exactly like bulging brown trout which are known to be taking nymphs of the water insects rising to the surface. At such a time brown trout are most difficult to catch on a dry fly, while a small wet fly drawn slowly just below the surface with a fine leader takes them readily. This nymph-fly fishing, as it is called, has been the subject of much study in England and many good descriptions of it have been written in recent years. The flies are often used without wings.

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I do not claim that nymph-fly fishing is essentially different from wet-fly fishing with a small salmon fly, which all salmon fishermen use at times, but it was the realization of the fact that the salmon were behaving like bulging brown trout which made me feel that they were taking nymphs. I therefore adapted my fly and my whole method of fishing with this in view and did not fish in the regular wet-fly style of casting, drawing the fly across the current. I worked the fly as I would a nymph fly for brown trout and immediately had extraordinary results where I had been getting only a few fish before. It is the point of view and not the essential difference in the tackle which animates this chapter.

One afternoon recently on the Restigouche on the Looking Glass Pool, there was a large number of salmon collected at the point where some spring water comes in near the head of the pool. For several days previously they had taken a dry fly readily and all the party had hooked all the fish they wanted. On the day I refer to, about five o'clock in the afternoon, the fish broke water all about, rolling and bulging, but they absolutely refused to take a dry fly, no matter what size or kind we used nor how we cast it. On the day be-

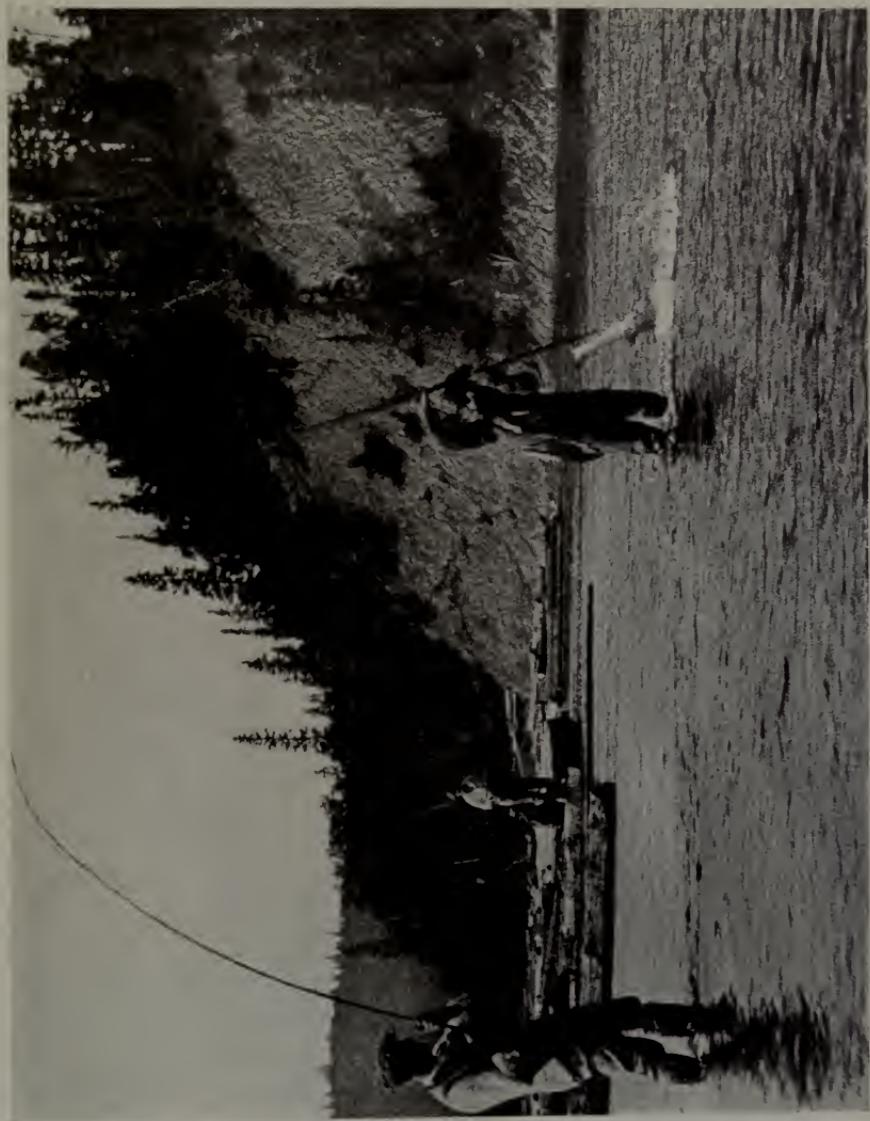


FIG. 48. THE AUTHOR LOSING A SALMON OFF THE GAFF

NYMPH-FLY FISHING

fore I had noticed a large hatch of small gauze-winged flies in the late afternoon. It occurred to me that the salmon must be after the nymphs of these flies and were taking them just below the surface. Fortunately I had some flies of this character with me which I use on the Neversink River in the spring, and with which I have been very successful with rolling brown trout. They were on No. 12 and No. 14 Alcock Model Perfect hooks with quill body and two long tail hairs, a light gray blue hackle from an Andalusian rooster and with bluish-gray wings tied in an erect position at right angles to the shaft of the hook. Both wings are tied close together like the keel of a boat. The fly below the surface is just like the nymph when it opens its wings at the surface and flies away. I put on one of these flies and a fine leader about eighteen feet long and cast out where the fish were rolling, let it sink a little, and drew it very slowly towards me by stripping in the line with my hand. The fly had only travelled a few feet before I saw a wake coming towards it and a salmon took the fly, rolling exactly as I had seen the others doing. My guess had been correct and the problem was solved. My son Ashley had on a similar fly and he hooked a fish at about

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the same time. From then on until dark we had salmon on about all the time. Of course we lost some, as we found it necessary to use the Hardy dry-fly trout leaders with the small end .008-inch diameter. These break at two and one-half pounds pull, so there was not a very great margin of safety over the pull of the rod and the reel, but by careful work we landed most of the fish. My son landed one forty-two inches long with a tail eleven inches across. He only weighed twenty-five and one-half pounds; earlier in the season this fish would have weighed thirty-five pounds at least. It took him down-stream half a mile or so before he got it in. Twice I stopped and tried dry flies without result, and several sizes of wet flies, all of the same pattern; I began with No. 0 size. The guide was posted on the bank where he could see the fly and the fish; the first fish came within a foot or so of the fly. I then put on a No. 2 fly; he said they came a little closer, about four or six inches away. With No. 6 fly they came almost up to the fly. With No. 8 fly I hooked one lightly in the end of the nose and lost him after a little run. With No. 10 fly I hooked two, both in the edge of the mouth. With No. 12 fly or with my nymph fly I hooked several, and all inside the mouth—

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one of them almost at the root of the tongue, showing that he really meant to take it for food. While the erect wing style of fly was better than the regular salmon fly type, and took the fish much more readily, I could get fish on any of the regular flies or trout flies if they were small enough, Nos. 10 and 12. I even tried a No. 16 and found they were just as anxious for that. Both my son and I were absolutely satisfied that these fish were taking the larvæ of flies, even if they were spitting them out later. Of course there was none in the stomachs, as they are almost closed at the throat. However, these fish were evidently taking these flies as food, as I hooked them at the base of the tongue. Since they cannot eat solid food at this stage, is it not possible that they take these small flies into their mouths and squeeze the juice out of them at the root of the tongue, suck the juice into their stomachs and eject the fly itself? The stomach of these fish often contains a brownish-yellow slime which would certainly not be there unless something entered the stomach, yet we find no solid food there. I believe they can and do take fly juice in large quantity whenever they can get it. One day on the Upsilonquitch during lunch, I noticed a salmon in an eddy come up

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twenty or thirty times. The eddy runs full of small flies. The salmon seemed to be feeding as would a trout; in fact I thought at first it was a large trout. When I had completed lunch I put on a very small black fly, caught the fish and examined it carefully. In its mouth were six or eight flies thoroughly crushed and in the stomach was a considerable amount of heavy yellow fluid and one fly. Next season I shall take a microscope to the river and carefully examine the stomach mucus and see if it contains the same cells as would be found in the squeezed juice of flies. If this is so, the age-old question of how a salmon lives without food and why he takes a fly is solved. Personally I thoroughly believe he does absorb the juice of flies; otherwise I do not see why he should take large numbers of small flies when there is a hatch on. Next season I am going to solve this question definitely.

At Soldier's Gulch, August 5th, a dry fly failed to raise a single salmon and a wet fly down to No. 8 in size was equally unsuccessful. My Never-sink nymph fly fished over the same water just afterward hooked six fish, of which we landed four, and made a very successful morning.

That same afternoon we took three fish on a dry

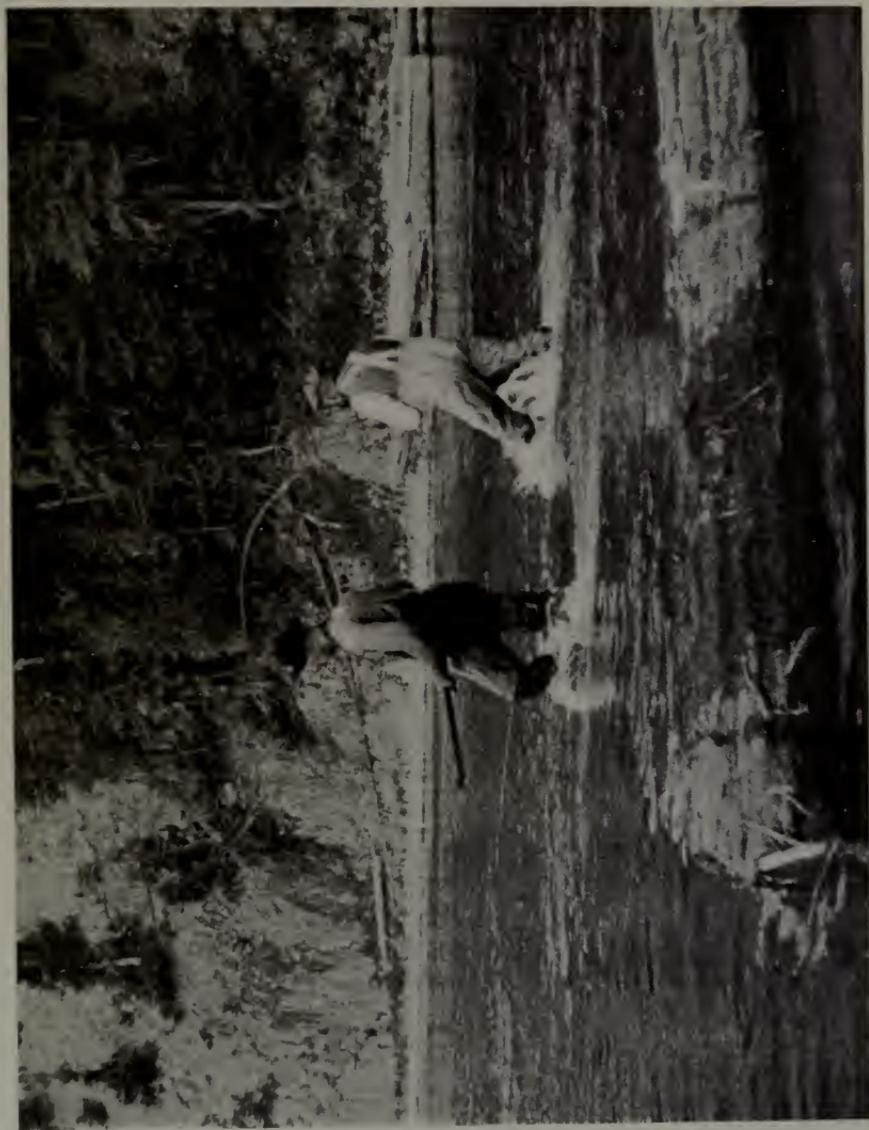


FIG. 49. THE SALMON MAKES US HURRY DOWN-STREAM BEFORE
ALL THE LINE IS OUT

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fly, showing changed conditions within a few hours. It looks as if the nymph style of fishing was best when a hatch of water insects is coming on and the larvæ are rising. Evidently the salmon have their attention on them and do not pay heed to anything else.

I have always been surprised at the holding power of these small hooks. One day I raised a fish on a No. 14 fly. He immediately settled down and felt as if he was a big fellow. At the same moment my son had a fifteen-pound fish which had run across the pool below where I was. While he was standing on the opposite bank my fish went straight down the pool like a submarine, right under his line. Here was a chance to lose two perfectly good leaders, to say nothing of the fly and line! I called for the canoe and paddled after the fish; it was my only hope. When we came to my son's line, I fished it up with the paddle and passed it back over the canoe and we were clear, my fish still making down-stream. After a half hour's hard fight, the fish finally came ashore, having towed the canoe all around the pool. I thought surely I had caught "Old Bill" at last, but it was only a twelve-pound fish after all, hooked in the belly fin. That No. 14 hook had held and

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landed him after all the bad fishing we did. A No. 10 Model Perfect or No. 12 Limerick pattern is large enough to land any salmon in the later season if it is handled properly and has hold of the fish in a good place. I believe we all use too large flies in the later season with the feeling that we must have fair-sized hooks to hold the fish, and this makes us miss a lot of fish we might otherwise raise.

NOTE

It is often of interest to know the weight of a salmon when no scales are available. Mr. Wm. H. Ward many years ago worked out a formula for obtaining the weight of any fish by measurements alone. He gave it:

$$\frac{\text{girth}^2 \times \text{length}}{800}$$

This formula is very accurate but it is difficult at first glance to see how it was arrived at. Mr. Benj. F. Kittredge worked out the solution as follows:

The area of the base of a wedge multiplied by half its length gives its cubic volume. The volume of a fish in cubic inches would be the area of his middle section multiplied by half his length, which is the length of two half wedges. If you square the circumference of a given circle or square,

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you obtain a square which is sixteen times the area of the given circle or square. So the square of the girth of the fish divided by sixteen would give the area of the section of the fish at its girth. Multiply the area of this section by half his length, the length of one wedge, and you have the cubic volume of the fish.

$$\frac{\text{girth}^2 \times \text{length}}{16} \times \frac{1}{2} = \text{cubic volume}$$

The specific gravity of a fish is about 1.15 so that twenty-five cubic inches of fish weigh twenty-nine of water, or one pound. So if you divide the number of cubic inches in a fish by twenty-five, you will have his weight in pounds. The formula becomes:

$$\frac{\text{girth}^2 \times \text{length}}{16} \times \frac{1}{2} \times \frac{1}{25} = \text{weight in pounds}$$

$$\frac{\text{girth}^2 \times \text{length}}{16 \times 2 \times 25} = \frac{\text{girth}^2 \times \text{length}}{800}$$

CHAPTER VII

DRAG AND DROPPER FLIES

A METHOD of fishing which was first suggested by a guide has often proved effective when every other means have failed. There are some kinds of water and conditions of weather and season in which it seems the only way to catch many salmon. As it is good sport I often practice it, to the great surprise of regular guides who never have seen it at all.

I equip the leader with a fine end about four feet long and on the end of this I tie an old fly which is worthless and has the hook broken off. Where the regular leader ends and the fine part begins I put a dropper fly on about three inches of gut. The fly is oiled like a dry fly. For this purpose any good-sized fly can be used; a Rube Wood seems very good but a gray hackle works well or a brown hackle. I suppose I prefer the Rube Wood because of my recollections of the great day's sport I have had with it, used in this way.

For this kind of fishing rapid rippling water is necessary. The best place is at the head of the

DRAG AND DROPPER FLIES

pool where the fish lie, just where the water begins to get deep. The fly is cast across the stream and the rod held high up so that the drag is held in the current and the dropper just allowed to touch the water, jumping from wave to wave.

The salmon will rise for the dropper like small brook trout and make a great splash. It will be found hard to hook them as many come short and they make such a show that the angler nearly always pulls the fly away from them too soon. However, he can soon get used to it. One day at the Forks on the Upsilonquitch I hooked five large salmon in succession in this way when I had failed to raise them by any other method for half a day. At the narrows on Gambo Lake in New Foundland it was the only way we could take the fish, and by this means we got ten or twelve a day apiece.

It is only under certain water conditions that this method is necessary but when it does work there is no way in which the salmon fisherman can have so much fun, because the fish rise only fifteen or twenty feet away from him and he sees the whole action clearly. I would rather catch a salmon in this way than in any other way I know except on a dry fly. I naturally prefer the dry fly because of the high degree of skill necessary in order to fish

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it properly. The drag fly without any hook and on fine gut is used to avoid the danger of taking two salmon at once, which would surely smash the tackle, and also to avoid the probability of getting fast in a snag while playing the fish hooked on the upper fly. The bottom fly simply drags in the water and holds the leader out taut above the water so that the dropper fly can be made to just touch the surface, and the light effects caused by this dribbling as seen by the fish attract him. The best way to cast is to place the line across the stream and hold the rod up, letting the line pull around straight with the dropper just touching the surface.

Fine gut is used in order to be more invisible to the fish in the current. If the drag should by any chance get fast to a snag or stone, the fine gut will break, and the hooked fish be saved.

CHAPTER VIII

SALMON BREAKING WATER

ANY observant fisherman will have noticed that salmon break water in a number of different ways. No doubt most men let it go at that and do not realize that the kind of break may mean a great deal to their success in fishing. Careful watching may save much time and lead to the capture of many salmon which might otherwise be in little danger of being taken.

For myself, I have long since divided these breaks into different classes and each has its separate meaning. The most frequent rise of the salmon at the surface is the round ring he makes in the water, similar to a trout or bass, but generally larger and more marked than either. This occurs when the salmon is taking something at the surface, or very near the surface, into his mouth. The ring is made sometimes by his mouth, which makes a suction close to the surface to take in the fly, or by his tail as he turns away, having taken the insect just below the surface. In either case the fish is feeding and the angler certainly ought to

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make him come to a fly if he is skilful and uses the right tackle. If the fish is taking a fly off the surface, a dry fly surely ought to raise him. If he is taking larvæ below the surface, a small wet fly on the nymph style of fishing will probably prove far better. In either case such a fish should be made to come to a fly if it is properly selected and cast. These fish are also often taken on a wet fly in the regular way.

Next, you may notice a salmon rolling; that is, coming to the surface and showing his head and generally his back fin. Such a fish is generally taking the larvæ of flies just below the surface; he is a feeding fish. It is very rare when such a fish cannot be caught with a nymph fly or small wet fly.

Sometimes the salmon break water with a great splash like a trout. This is when he has made a rapid rush for the fly from some distance away and is unable to stop when he gets to the surface. He also is a feeding fish, and ought to be easily caught.

When, however, you see a salmon leap from the water his whole body thrown into the air, with his head up and gill plates and mouth closed tight and his throat drawn in, and fall upon the surface of the water on his side or belly with a great slap,

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you need not waste any time fishing for him because you will never get that fish at that time. He is in pain from the growth of the melt or roe sack inside his body and is jarring himself to settle the sack or break down some small lesion formed in the body cavity. In all my experience I have never yet caught a fish I saw jump in this way. You may get another fish in the same locality but not this one. This form of leap is much more frequent in the late season, when the sacks get larger and occupy more space in the body.

I always watch all breaks with the greatest care, as they not only show the location of the fish, but often indicate just how to fish for them in the surest way.

CHAPTER IX

FISHING STILL WATER

OFTEN during the late season—after July 1st—the salmon gather in large numbers in still-water pools, or if it is very warm, in spring holes off the main stream. At such times the regular wet-fly fisherman passes them by in despair, as he is almost sure to be unsuccessful if he tries to take them with his regular tackle.

For many years fish in these places have baffled me and I have seen no way in which to take them on a fly, but constant experimenting finally enabled me to work out several ways of catching them, and for the last three years I have had great sport in just this kind of fishing.

Naturally when the salmon are in perfectly still water they are very shy and are easily alarmed by any disturbance in the water whatever, so it is absolutely necessary to fish for them with very fine tackle. I find that I must use at least fifteen feet of leader, and I have much better luck with twenty feet. The last six to ten feet near the fly must not exceed .010-inch diameter, and very often

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this is far too large, and the angler must use .008-inch or .006-inch diameter gut. Of course this means a light rod and line to handle it and the tip must be kept up all the time. Such tackle cannot be used on a regular salmon rod as the first strike will part it.

The flies for this purpose are of two varieties. The dry fly and the small wet fly, preferably of the upright wing pattern, or the wingless nymph pattern. In some pools, quite often a No. 10 or better a No. 12 salmon fly will do; Silver Doctor or Silver Grey is best usually, but the Wilkinson is also good. The nymph variety of fly is often preferably tied with erect wings or with folded wings. The method of fishing with these flies, however, makes all the difference between success and failure. It is necessary to cast a long line, usually not less than seventy feet. If a light surface wet fly is used, this should be slowly drawn through the water by stripping in the line with the hand. If after fishing a while you fail to raise any fish and still see them rising by themselves, try a fly with a heavier body and allow it to sink for a minute or so before you begin to pull it through the water. This causes the fly to travel at a lower level and gradually rise to the surface.

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It is while the fly is rising that the salmon will probably take it. If you see fish follow the fly and not take it you may make up your mind that the fly is too large or the leader too heavy, or the fly is not pulled at the right speed. Change first one and then the other and see where the trouble is. If the salmon follows the fly he wants it and will take it if the fly and leader and speed are right.

The use of a dry fly on a still water is far more difficult. After carefully greasing the line and leader with deer's fat cast out where you can see the fish or have seen one rise, and let the fly rest on the water a few seconds and then give the line a slight pull to make the fly move just a little as if the insect was going to rise and fly away. If this does not bring a fish draw the fly slowly over the water a little way and let it stop, then move a little and draw it in under the water rather fast. If the fish will take a dry fly at all these tactics are sure to raise one. Recently on the Kedgewick at Conner's Hole at the end of the season in August, there were a considerable number of salmon collected. When we arrived, several were rising at a time and it looked easy to get them with a dry fly. An hour's trial failed to raise a single fish.

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A small wet fly slowly drawn well below the surface using a very fine leader got rises almost at once. That afternoon and the following day we took fourteen fish in this way from this pool. The largest was forty-two inches long, and weighed twenty-one and one-half pounds. He was taken on one of my regular salmon dry-fly leaders, the gut ending in .010-inch diameter to which was added a nine-foot Hardy dry-fly trout leader with gut .008-inch diameter. The salmon took the fly with a leap about six feet long and two feet out of water and came down on the fly just below the surface. He must have seen it a long way off. The fly was a No. 10 Wilkinson. Many of these fish will jump for the fly, but most of them suck it in just below the surface, showing their back fin as they do it. An old French guide with us told me he had been forty years on the river and had never before seen any fish taken in such still water. This would seem to indicate that this method of fishing was new to the river. I came back feeling that I could always get plenty of salmon if I could only find a good number of them in a still pool.

CHAPTER X

CASTING

I AM not going to enter with great detail into the intricacies of casting, as a book could be written on this subject alone, but I feel that I should warn any intending salmon fisherman that no selection of tackle or good fishing water can make up for flies badly placed, or cast the wrong way, or not cast far enough to avoid scaring the fish. Good casting is not at all difficult to learn, and this being so, I am always surprised at how badly most fishermen do it. Of course it requires skill and long practice in order to do it exceptionally well, but any one can learn to cast reasonably well in a few days if he will only pay attention to a few important points. I am going to give a few suggestions as to how to learn in the hope that it may help my readers to have more fun on the stream. You cannot enjoy a salmon trip to the full unless you can cast well. You may catch a lot of fish if they are biting but you would get more and have a far better time if you cast really well.

Most people seem to think they throw the fly



FIG. 50. MR. LA BRANCHE CHECKING BACK CAST AT JUST THE RIGHT POINT FOR A PERFECT CAST



FIG. 51. MR. LA BRANCHE CHECKING FORWARD CAST AT EXACTLY THE RIGHT POINT FOR THE DRY FLY TO FALL LIGHTLY

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and perhaps this term has some effect on their actions. They try to throw the fly as they would a stone and are surprised not to see it go far out. A fly is a very light object and cannot be thrown any very long distance. The reason that it goes long distances when cast, is that the rod imparts energy to the line, fly, and leader—all three. When the rod is stopped in its forward motion this energy must go somewhere and it gradually unwinds the line in the air, as each portion of the line comes to rest until it comes to the leader and fly. The fly is propelled far off by energy carried by the line and leader and not by its own velocity alone. It is evident that the line and leader must get their energy when the rod is moved forward. If they are to get it without loss and all the rod can give, the line must be straight back of the rod and not in a curl or loop. To get it straight and not have the fly or leader touch behind the caster the line must be cast high above the head and not down behind toward the water. In order to do this the motion of the rod must be stopped when it is about vertical as the tip even then will bend backward and tend to throw the line down behind. The hardest thing to learn in casting is not to put the rod too far back. This

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knack can be acquired easily if the caster will put something between the upper arm and the body and hold it there by the pressure of the arm. Mr. La Branche suggests a glass whiskey flask and standing the caster on a stone. He says he will not raise his arm as long as there is anything in the flask. In this position the rod cannot be thrown far back and a good backline is easily secured. Turn and watch your backline and pay no attention to the front cast until you get a good high straight backline. After that the front cast is easy; just push the rod forward, increasing the speed a little at the end, and the line will shoot through the guides. A good cast will always pull the line in the guides and the fly will lay out straight. After you get so that you have a straight backline and can shoot the line six to ten feet through the guides on the first cast, you are on the way to cast properly, and like the Alderman who proposed putting only two gondolas on the lake in Central Park, I shall leave the rest to nature. But it may be asked how I know when I am casting well enough. With a six-and-a-quarter-ounce rod and proper line and leader any one ought to be able to cast seventy feet at least. A good cast would be eighty feet and an expert should cast ninety to

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ninety-five feet. Only a few very skilful men can do better than this, probably not more than a dozen all told, using the regular fishing rig. No one should be satisfied with less than seventy feet with a single-handed rod, nor less than eighty to ninety feet with a two-handed rod with which the expert can cast 100 to 120 feet. It is very hard for the trout fisherman who is used to small water and short casts to realize the importance of not allowing the fly to touch the beach on the back cast. Such a blow generally breaks the hook where the steel is cut in for the barb. The fisherman goes on using the broken fly until he raises a fish which he invariably loses. This summer I gave six small flies to a fisherman I met on the river, as he had none, and the salmon would only rise on the small sizes. Next evening I met him again and he complained that my flies were no good as he had lost four salmon and all of them had broken the hooks in their mouths. He did not cast properly and was hitting the flies on the rocks behind him, breaking the flies and so had been hooking the salmon on the broken hooks. When I showed him what was happening he was quite satisfied with my flies.

The switch cast is most useful in salmon fishing

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but I see it very little used. This cast is made by drawing back the rod slowly, leaving the fly and line in the water. The line is drawn back until the line extending down from the tip of the rod hangs below the line of the rod itself about a foot. The rod is then driven forward throwing the tip almost down to the water. The loop of the line takes the energy from the rod and lifts the rest of the line and leader from the water and shoots it out: Very nice straight casts can be made in this way and good distance obtained. It is no great effort to switch cast sixty feet with a six-ounce rod when there are trees or rocks back of you; I have even made seventy or eighty feet under good conditions. The expert can cast just as far on a switch cast as he can on a straight forward and back cast. I do not know what I would do without this form of cast, I am sure I would never reach many fish I now get with ease. A very little practice along the line indicated will enable any one to learn it. As far as I have observed all the other casts are modifications and adaptations of these two.

CHAPTER XI

ODD INCIDENTS AND ACCIDENTS ALONG THE RIVER

You will have many queer experiences with salmon no matter how skilful you may think you have grown. Perhaps they are needed to humble your pride and bring you down to earth once more. One day on the Upsilonquitch, Mr. Monell and I were fishing together. We made an agreement to fish in the following manner in order to see which was the best way to take the fish at that particular stage of the water. We were alternately to fish each pool with a dry and a wet fly. The dry fly was to be used over the pool first, because it would not disturb the fish. On the first pool it was his turn first with the dry fly. He caught one ten-pound fish and sat down contentedly to watch me try with a wet fly. I was on my mettle because he was always chaffing and making fun of me, so I fished my very best; it was no use, cast as I would, I could not start a single fish. At last in disgust I made the longest cast I could to the tail of the pool. Getting no rise, I threw the rod over

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my shoulder and walked slowly up the beach letting the line and fly drag behind. I was discouraged with my poor success. I had not gone more than a few feet this way when I felt a terrific pull and was nearly rolled into the water; a large salmon had hooked himself. After a good fight he was later landed entirely by accident.

At the next pool it was my turn to fish with the dry fly. The wind was blowing a gale up-stream by this time. I cast my best but it was almost impossible to lay out a dry fly properly. Finally one great gust of wind blew the line, leader, and fly over my head and up-stream in back of me into a shallow current. The fly no sooner stuck than a good salmon took it and hooked himself and was later successfully landed. Mr. Monell also caught one on a wet fly in a regular and orderly way, when his turn came. That whole day I did not catch a single fish as I meant to—all were flukes—yet when we got back to camp we both had the same number of fish and mine were a little larger. We agreed it was no use trying to learn anything about salmon.

Another day, fishing Red Reef Pool with a dry fly, I brought a ten-pound fish up to the beach, and when we gaffed him we found the hook had

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parted in the middle and the hackle feather had been securely tied close to the ring of the hook and the other end near the bend, so that it had held on both ends of the feather with the two parts of the hook separated about two and one-half inches! This fly was, of course, tied Palmer. This fish was really fooled by the feather.

That same day a fish took the fly with a savage rush and made off down-stream so fast I could scarcely keep up with him along the beach. There was no time to get a canoe. When he turned at last I was all out of breath. After a half-hour or so I began to think I had hooked a really big fish, when he jumped, and I saw one of only about twelve pounds. I could not understand it at all. When he finally gave up exhausted and came in I found that the fish was simply lassoed around the tail with the hook hooked in the leader and not in the fish at all. This method of taking them certainly makes it interesting for the fisherman for a while.

Illustrating how we never can tell what will happen, I was fishing on the Terra Nova River in New Foundland in a very rocky pool with a straight cliff wall on the opposite side of the stream. I raised and hooked a sixteen-pound fish which

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ran straight across the pool and jumped high in the air against the wall of rock and hit the rock in such a way with his head that he fell down absolutely stone dead and was towed back across the pool.

This same place was above some very steep rocky rapids where it was impossible to go in any way. If the fish went out of the pool there it was impossible to get him back again as he went down over a small falls. To keep the fish in the pool if hooked, I stationed my guide at the narrow rock outlet with a large stick with orders to thrash the water if the fish came down that way and scare him back up-stream. I hooked a fourteen-pound fish which immediately made straight for the outlet. The guide was so busy watching me that he did not make any disturbance and the fish rushed out and over the falls. There was nothing to do but break the tackle; and the line parted next the leader. Three weeks later I returned and fished the same pool and again hooked a fish. This time the guide, who had had his lesson, kept the fish in the pool and we landed him. It was the very same fish. Along his side was a line where the leader had been rubbing against him in the current and had worn off the scales, and on the side of his jaw was an

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oval hole about half an inch long with round smooth edges where the hook had finally festered out and the wound was healing. There were probably 200 other fish in the pool at the time. It seemed queer that this one fish was the one always ready for the fly. He was evidently what is called a "taking" fish. Some guides believe that there are some fish which always take the fly readily and others which never do so. This might seem true if it were not for occasional days when every salmon in the river seems ready to bite. I have seen several such days in my experience but they are very rare.

A few years ago in New Foundland I had quite an interesting time taking salmon in a most unusual place. The river I was fishing ran about seven miles from the sea to the first lake. There were few pools and the fishing was poor at this point. Between the first and second lakes there were a fine series of rocky pools where we had some fine sport. Above the second lake there was some good water but almost no fish. We wondered at this until a native told me they did not go up the main river above the second lake but all went up a small stream entering the second lake. We went to the mouth of this stream; it was not over fifteen

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to twenty feet wide and with no great flow of water. There were a few fish where it came into the lake. We started up the small stream and had to drag the empty canoe about three miles, as I was anxious to see where the salmon had gone. We finally came to a large pool, really a small pond with water lilies all around the sides. The water was about ten feet deep and the bottom of fine gravel. We saw several fish rising. In this still water only a dry fly or nymph fly could be of any use. I finally took several fish from this pool. We followed on to the head of the pool and found six more of these small lakes all surrounded with lilies. All were full of salmon and we took all we wanted on a dry fly along the edge of the lilies. It was very similar to black-bass fishing in our own lakes. One of the fish caught was stained very yellow from the yellow mud under the lily pads. I visited this place two seasons and always found it full of fish; in fact it was great fun and quite a novelty in salmon fishing.

One season on the Gander River in New Found-land we reached the mouth of the river just as a great run of fish was starting up the river in early July. The nets had taken a large number of fish and we expected to have great sport. We were

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bitterly disappointed, however, as we could not make the fish pay attention to the fly. We could see them all the time going over the shallows, but they would not take at all. In thirty miles of the river we only took two fish. Our Indian guide said they would not bite until they got to the place where they were going and there they would take. I asked where that was, as there was a large lake ahead and I knew I could not get any there. He said he would show me and he did. He took me to the corner of a small island about a mile below the lake and said: "Here is where they are going." It did not look like much of a place to catch salmon. The water was about three feet deep with a poor current and stones from one to two feet in diameter. I waded out and cast and almost at once hooked a fish. Before night I had taken seven and the following day we took all we wanted here and near by. Anywhere else in the river it was impossible to raise a fish. My only explanation is that just above this point a fair sized stream enters, known as Little Salmon River, and the cooler water may have affected them. Visiting the same place at the end of the season another year I found that the salmon were evidently going to spawn in two pools just above

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here, as they were collected in large numbers. These fish reach Gander Lake about July 5th. The lake is almost like a figure eight, the outlet at the narrow part of the lake and the inlet opposite only a few miles away. The fish do not appear in the river beyond until well on in August. It is only a few miles across but they travel around the shores, a distance of eighty or a hundred miles, in place of going straight across. This is shown by their appearance at the mouths of other small rivers.

One day at the home camp we had a scow drawn up in the pool. The water was very clear and we could see five or six salmon swimming about the centre of the pool in eight or ten feet of water. I thought I would see if I could hook one of them as they are particularly hard to get under these conditions. I put on a long leader and lead-bodied fly with erect wings and a No. 12 hook and cast out and let it sink about four feet, then drew it toward me slowly. One of the fish made a rush, took it, and was hooked. He did not jump but tore about the centre of the pool. The others seemed much excited, and one of them followed him alongside for some distance and then seemed to make up his mind what was the matter. He

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swam ahead of the hooked fish and then made a complete turn like a somersault right at the nose of the hooked fish; his tail of course hit the leader and broke it off. The whole action took place within thirty feet and we could see it all plainly. I wonder if some of the fish we lose where we cannot see them, do not get away in some such way, by the help of others. This case did not look like an accident.

My son one day was playing a fifteen-pound fish hooked on a No. 8 fly. He was certainly hooked in the mouth as the guide saw him in the water. He made a swift rush and a turn and there was a sharp jerk on the line and then the salmon pulled much harder than before, but always straight away. After a while he came in and when gaffed it was found that he was hooked in the upper part of the tail. That salmon was clearly out of luck.

At the Forks Pool in New Foundland on the Grand Codroy one season, the water was very clear and low about August 20th. There was a very large number of fish in the pool, perhaps a thousand or more, and they were lying in long rows along the ledges. We took a number on a dry fly and expected sport for several days. About five

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o'clock it clouded over and looked like a storm. I was fishing the upper end of the pool and my friend, George Dart, was fishing the centre. He called me to come down to him. When I got there he pointed out in the pool to the fish which were gathering in a large circle about fifty feet in diameter. As they would not rise we stood and watched them. They began to move around the circle and seemed to get excited. As the first drops of rain fell they began to break water like porpoises, all in a ring swimming around quite fast, one after the other. The whole circle seemed full of leaping fish. This lasted for about an hour. When the heavy downpour started they stopped rising and we made our way to the camp as we could not catch any. Next morning there were scarcely any fish in the pool. The natives called this "a salmon circus," and they say it happens every once in a while when fish have been penned up for a long time by low water and are about to move up-stream on a rise of water. I myself have witnessed this performance twice, but I have never met another angler who has seen it.

One day at the Eight Mile Pool on the Upper Restigouche the water was very clear and we could see everything in the part of the pool we were

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watching. There were only one or two small salmon but a number of good-sized sea trout in water six to eight feet deep. They would not touch our flies, and while we were talking trying to concoct some scheme to make them rise a red squirrel jumped into the water from the opposite bank and began to swim across the river. The largest trout made for him at once and coming behind him caught his tail and pulled him below the surface. The squirrel broke loose and struggled to the surface again with part of the hair of his tail gone. Again the trout caught him and a second time the squirrel got away with more of his hair stripped off. The third try was near our bank, and when the squirrel finally came ashore at Judge Van Etten's feet his tail was stripped like a rat's and he was completely exhausted. I know now that the hair on a squirrel's tail is his natural protection against sea trout. Such are the unexpected marvels of nature.

CHAPTER XII

ADVICE ABOUT FISHING

FOR those unfortunate mortals who have never tasted the joys of a salmon trip but who are just starting, I am going to give a little advice. No doubt the old hand will say he knows all this, and for them this book had better be finished at the last chapter. Still, even old campaigners can learn from each other; I hope to continue to learn to the end of my fishing days.

Suppose we consider fishing a river entirely new to both guide and sportsman and see how we proceed. I do not believe in luck except in weather and the size of the fish hooked. Catching fish is a matter of knowing how and fishing correctly all the time. In salmon fishing a good angler will always get fish and plenty of them, if there is any quantity of salmon in the river, and particularly if he can see them. There is no fish so sure of capture as the salmon if you know how to please him and are skilful in manipulating your tackle.



FIG. 52. MISS LUCY HEWITT HOLDING SALMON AT THE SAFE ANGLE TO
SAVE LEADER



FIG. 53. MISS LUCY HEWITT HOLDING SALMON AT TOO LOW AN
ANGLE. MAY BREAK LEADER

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For equipment in a strange river I always have the following outfit in the boat, ready for use at any time:

A light fourteen-foot salmon rod rather flexible with light line. Leader fourteen to sixteen feet long with .012-foot diameter for the last three or four sections. On this I have a No. 8 or No. 6 Silver Grey fly, depending on whether the river is high or low.

Next, a single-handed rod ten feet six inches long, with extra hand piece below the reel, and with a light line and fourteen-foot leader with the small end .010-inch diameter and a grey hackle dry fly tied Palmer about one to one-and-a-quarter inches diameter, oiled. The line and leader are both carefully greased with deer's fat so they will float well.

Further, I have a six-and-a-quarter-ounce ten-foot tournament model rod, with extra hand piece below the reel, equipped with about twelve feet of leader with the end .010-inch diameter or less, and with an erect winged nymph fly with silver body or a very small No. 12 wet fly, either Silver Grey or Silver Doctor.

I also carry a leader with Dropper and Drag fly as described in the chapter on "Drag and

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Dropper Fishing," ready for use in my hatband. This can be put on any of the rods if suitable water is found for using it.

Equipped in this way, the angler rarely has to change flies or leaders and does not lose time nor use up the fine ends of his leaders putting on new flies constantly.

Assume that we come to a pool coming down the river in a canoe. The canoe should be stopped about a hundred feet from the top of the pool to see how it should be fished. He should pay no attention to the guide but use his own judgment if he is to learn how to fish. If it is not too late in the season, the fish may be in any part of the pool. Take the fourteen-foot salmon rod and fish the run at the top carefully, first with the short line with the fly at the top of the water and next with the fly below the surface. Cast the fly across the current and let the current drag it around. The salmon will generally take a wet fly on the swing. When the line and leader are straight with the current, pull the fly up three or four feet and lower it again and pull up fast. This generally starts a hesitating fish and makes him come. When the pool has been fished down below the swift water with the salmon rod, I generally change rods,

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as it is hard to catch fish with this tackle in the centre of the pool or at the tail if the water is smooth and slow. At times they take a salmon fly well but generally it scares them and they run up into deep water. If any fish can be seen try them with a dry fly as explained before. If they show no sign of motion, and you have not scared them by bad casting, try the nymph fly on the six-and-a-quarter rod. You must get above them sixty or seventy feet and cast across the stream, drawing the fly very slowly past them; watch out for them to dart out after it. If nothing happens after several casts, the fly is probably riding too high in the water. Take it off and use one with a lead body and let it sink much closer to the fish. This will nearly always start them. Sometimes they come short several times. In this case use a smaller fly. If they still come short and don't take it you will find the leader is too large and frightens them; it may be necessary to use one as fine as .006-inch diameter in order to hook them in clear bright low water. If you do you will have to be very skilful not to break it in hooking them. It can be done by just raising the tip, particularly on a ten-foot-six-inch rod and not striking at all. Hold the rod vertical so that all

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the strain comes on the tip and you will have a good chance to land the fish if you are careful. A good angler can get about half the fish he hooks in this way, otherwise he would get none at all under some weather and water conditions.

You will see from this that even in the same pool different tackle should be used as conditions change. It is impossible to fish all waters well with one kind of tackle. This can only be done in high water in the early fishing when all fish are in the swift water or in places with plenty of current to make the wet fly work properly. Later on only part of the fish are in this kind of water, while the greater number are in still water along ledges or at the tail of the pools. In these places the regular wet fly is not a good means of taking them and it is for this reason that so many salmon fishermen are unsuccessful during the later season at the very time when there are more fish in the river, and they should be having the best fishing.

My advice to the man who wants to have a good time on the salmon river is first to get his tackle in good shape, with a proper assortment of flies, lines, leaders, etc., as described in the chapter on tackle, and to be sure his lines and leaders are well balanced to his rods so they cast properly.

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He should then learn to cast really well with both a double and single handed rod; both are necessary and neither will fish all kinds of water properly. All the varieties of casts must be learned on account of obstacles behind which must be avoided. It is here that skill becomes valuable. A high back line is absolutely necessary, as explained in the chapter on casting.

There is no royal road to getting good salmon fishing continually. It requires genuine skill and perseverance, hard study and observation. A good salmon fisherman is the result of years of hard work and it is this which gives the sport its unique fascination. The degree of skill and knowledge required is far greater than any other form of fishing and the difference between the good angler and the poor one is more marked than even in trout fishing, where there are always a certain number of what I call suicide trout which will take any fly or bait offered in any way. This is not true of salmon when they are hard to catch; there are no suicide salmon, they are an unknown species. The angler must give him what he wants or go home empty handed. For this reason the salmon fisherman should go on his trip prepared for every kind of water and every mood of the

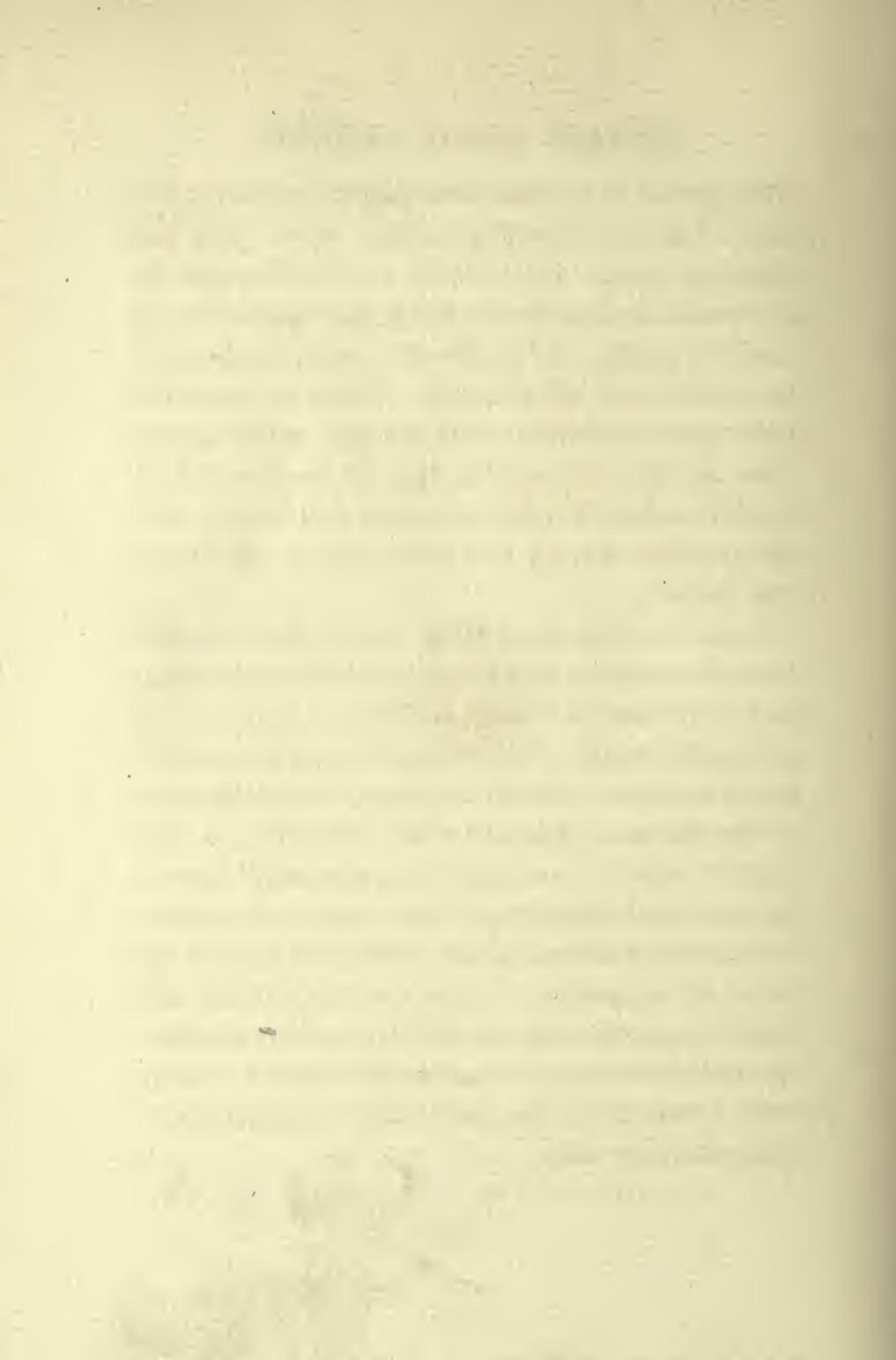
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fish he wants to catch. He must be able to fish low clear water and still pools and sluggish fish as well as rushing waters and hungry salmon. There are low clear waters early in the season some years and high water and almost spring conditions in August in other years. Recently on the Restigouche—after the lowest water and hardest kind of fishing—a rain raised the river so that the very last day of the season was by far the best day of the season for sport. Salmon took a fly as greedily as they ever do in the spring and there were many more fish in the river. The fisherman could catch just as many fish as he wished; there never was a better day. Wet flies of course were the best tackle, whereas they had been useless for the previous five weeks. It is for these reasons that I have written out my experiences in taking salmon under all conditions, so that my brother anglers can always have good sport if there are fish enough to make it, no matter what the weather may be. It is your duty, brother angler, to equip yourself with suitable tackle, and become proficient in casting, and to observe all you can on the stream. If you do not catch salmon when they are in your water it is your own fault, and not due to any other cause; you have only learned part of your

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trade and it is for your own pleasure to learn the rest. I made a trip this summer with a very old friend of mine. On arriving at the Restigouche he was shocked at the low water and what he heard from the guides. I told him not to be discouraged, he would have lots of sport. When we returned home after two weeks with no rain in the meantime, he said, on parting, that he had never had so good a trip or taken so many fish before; and this was in spite of the worst fishing conditions ever known.

If my description of what I have observed and learned proves of service to my fellow fishermen, and helps them to enjoy the best of sport, I will feel amply repaid. May we meet along the stream, and if not there, then in the happy fishing grounds of the Micmac Indians in the hereafter. I only hope it may aid you if only in some small way to have as much pleasure as I have had on the rivers. On parting with one of our guides, as we left for home, he remarked: "When you die, Charon will have to stop the boat on the Styx and let you fish, he could never get you across the river." I only hope I may have one last chance to see if I can raise one there also.





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